
yojana
all
three years
Exclusively for SC/ST
Candidates.

Solid Foundation For Progress

Morarji Desai
Prime Minister

TWO EVENTS annually mark a landmark in our history which generally provide an opportunity for self-assessment by Government and the people. One is the Independence Day and the second is the Republic Day. If on the first occasion we had tryst with Destiny, on the second the people had a covenant with themselves and laid down the principles and structure under which they would wish to be governed.

It is those principles and that structure which every Government holds is trust for them and it is the breach of those principles and trust by the previous regime against which the people revolted and the Janata Government after receiving a massive mandate assumed office 21 months ago.

Democratic System Restored

We took significant and far-reaching measures to revive the democratic system and its values. The Rule of Law was reintroduced and the wreckage of the past was ruthlessly wiped out. Liberties of the people, the Press and the platform were restored and we settled down to the task of clearing the decks for constitutional amendments and of restructuring our economy.

In the economic field our task was made very difficult because of the deteriorated economic situation which we inherited. We took some remedial steps as soon as we could but in the initial few months we had to try to overcome the legacy of the past during a period in which rise in prices was a normal feature of the economy.

We were faced with shortages in some articles of consumer needs. We took deliberate decisions to curb or ban exports of some commodities and import others with the result that after 3 or 4 months we were able to wipe out the shortages, keep price rise down and enter into a period when we could maintain prices at a stable level.

We kept inflation in check despite increase in money supply. We were able to evolve long term policies for increasing production providing for improvement in the short term wherever it was possible.

We reconstituted the Planning Commission which set to work on the Sixth Five Year Plan under the new concept of Rolling Plan in June 1977 : the Draft Plan was formalised by early 1978 and was placed before the National Development Council in March 1978. In the meantime the Annual Plan for 1977-78 in terms of the new approach which we had evolved had been finalised in consultation with the representatives of the State Governments.

With the philosophy of new planning in mind which was based on our commitments to the electorate we formulated our Economic Policy in November, 1977 and Industrial Policy in December, 1977. I make bold to say that seldom it ever has so much of evolution of basic economic policies been done in such a comparatively short time. To these fundamental bases of our thinking I have only to add the Resolution on Textiles Policy which has endeavoured to solve some of the burning issues involving one of our major Industrial efforts.

A Radical Departure

The new philosophy of planning makes in many respects a radical departure from the past. An important feature of the Plan outlays for the period 1978-83 is the shift towards higher outlays in the States sector. This is as it should be because most of the development in the field has to be in the States sector.

This is also reflected in the increased provision that we have made in the States sector which now exceeds the outlay in the Central sector, the outlay in the States sector in 1978-79 being about Rs. 5985 crores as against the Central Plan of Rs 5664 crores.

The acceptance of the recommendations of the Seventh Finance Commission would result in a larger devolution of resources to the States and is in line with this trend. The annual Plan outlay in 1978-79 has been fixed at Rs. 11649 crores which is 17 per cent more than in the year 1977-78.

We propose to maintain the growth of the gross national product at an average rate of 4.7 per cent as compared to the earlier Plan periods in which it ranged between 3.2 per cent and 3.8 per cent. The gross national product at 1970-71 prices has been estimated to have grown by about 6 per cent during 1977-78 as compared to only 1.6 per cent in 1976-77.

Rural Development

Lest it should be thought that our performance in

Continued on cover III

YOJANA

Volume XXIII Numbers 1 & 2
26 January 1979
6 Magha 1900

Published on behalf of the Planning Com in Assamese, Bengali, English, Gujarati, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 **Telegraphic Address : Yojana**, New Delhi. **Telephones :** 383655, 387910, 385481 (extensions 402 and 420) **Circulation :** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.00 Two Years—£ 4,50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy— £ 0.12 or $ 0 25

A Crucial Cause

In a LABOUR-surplus economy, haunted continuously by the spectre of massive unemployment, promise of jobs for all can illafford to be gossamer in nature. It will, of course, require a long march before the goal can be achieved, the blue-print for full employment notwithstanding. Saddled with the onerous responsibility of removing the back-log of 20 million person years, the country has simultaneously begun the search for avenues of employment to another 30 million person years, the likely addition to the labour force by the end of March 83.

The over-all figures of the unemployed may not be very reliable or accurate. Undoubtedly there is scope for conceptual and methodological improvements Even the available data need to be fully exploited for throwing light on important aspects of rural unemployment and resultant policy implications. This should not, however, be an obsession or major pre-occupation with the planners.

Besides the staggering number of the unemployed, it is necessary to notice the structural imbalance in the employment situation. The educated unemployed represents a significant part of the total registered with the employment exchanges of the country. The number will certainly go up with the increased educational opportunities provided by the Sixth Plan. The social and political implications, particularly the mounting tension among this articulate section of the society, cannot be underestimated even when more emphasis is given to the rural poor, mostly illiterate. These educated job-seekers cannot be blamed even if they are hell-bent for white-collar jobs They are the products of an antiquated educational system which is yet to be vocationalised, employment-oriented and suited to the needs of a growing economy. Instead of making the educated unemployed the scapegoat, serious effort should be made to restructure education, striking a balance between the needs of cultural advance and their quick absorption in productive activities.

The basic understanding of the new employment strategy seems to be that more people will have to be provided jobs in the rural areas where majority of the people live This is both plausible and debatable. Mere change in technology and mode of production unless accompanied by land reforms will not enable agricultural operation to sustain additional labour. Small-scale industrial development in rural areas must also be linked with local resources and skill to have an impact on the employment situation. A local market for the goods produced and purchasing power of the rural masses are additional factors to be reckoned with.

In many quarters there is a fond hope that Maharashtra's statutory employment guarantee scheme will become a model for other States to follow. Maharashtra has the reasources to provide financial compensation in case of its failure to give employment to the rural poor. Other States may lack in finances. With larger devolution of resources by the Seventh Finance Commission it may not be idle to expect similar security against unemployment in all the States.

The Plan strategy is rightly directed to employment as one of the major objectives. Adhering to the conventional stategy of economic growth, however, will not eliminate the massive unemployment. There is a clear need to encourage use of more labour-intensive or employment-intensive technology. Fiscal policy should be designed accordingly and tax benefit could be related to the number of workers employed or to the amount of wages paid

26th JANUARY

A Sacred Anniversary—Thrice Blessed.

This Day, 49 years ago,
we proclaimed our resolve to
achieve Purna Swaraj.

—This day, in 1950, we proclaimed ourselves
a Republic and gave ourselves a Constitution
enshrining the ideals of Justice, Liberty,
Equality and Fraternity.

—Around this day, two years ago, we began
our journey back to the democratic processes
guaranteed by the Constitution.

—To mark the Anniversary—

**Let us give thanks for the restoration
of our liberties**

**Let us strive to fulfil the dreams of those
who gave their lives in the
cause of freedom and equality.**

**Let us rededicate ourselves to the early
achievment of social, economic and
political justice.**

davp 78/423

Employment Strategy Of the Draft Five Year Plan (1978-83)

THE RATE AND pattern of economic growth realised over the last 27 years has enabled the country to become one of the major industrial countries of the world with a significant record of import substitution, technological development and export promotion. But these achievements have been overshadowed by the failure in checking the growth of unemployment in the country. The unemployment problem has indeed assumed an alarming magnitude.

Although the number of chronically unemployed persons is only about 4 million, the total volume of unemployment including the intermittent unemployment and underemployment of the employed persons as of 1977/78 is estimated at 20.6 million person years. It has been also estimated that since 1971 the labour force has increased by about 35 million Of these about 25 million have been absorbed in agriculture and 9 million in non-agricultural activities. Of the latter only 4.6 million were employed in the organised sector. Thus the agricultural and the unorganised non-agricultural sectors together absorbed over 29 million of the additional labour force many of whom must have got low intensity employment and consequently low incomes. About a million persons have been added to the pool of the chronically unemployed These trends indicate that only a small fraction of the increase in the labour force finds itself a place in the organised sector, while the rest drift either into agriculture or into unorganised non-agricultural activities, generally characterised by low incomes and seasonal unemployment or underemployment.

The population projection for the current plan period indicates an increase from 634 million in March, 1978 to 697 million by March, 1983. Correspondingly the labour force is expected to increase from 265 million to 295 million an increase of about 30 million over the five year period. With the current volume of unemployment estimated at over 20 million person years it is necessary to find employment opportunities of the order of 50 million person years to employ the additions to the labour force and eradicate the unemployment At an assumed rate of growth of five per cent per annum in industrial production the organised sector will be able to employ only about 2 7 million additional workers Even if the rate of industrial growth is raised to 7 per cent per annum, the additional employment generated in the organised sector will only be about 3 million. The rest of the labour force will have to be absorbed in agriculture and the unorganised sector. The sectoral distribution of this labour force is not likely to change significantly if the present production and employment pattern continues. But if there is a sizeable step up in the growth of rural industries, small scale manufacturing and related tertiary activities, the distribution may begin to change. Such a step up is possible only if policies promoting labour intensive sectors are persistently pursued.

Overall Employment Policy

The magnitude and nature of the unemployment problem discussed above under-score the absolute need to adopt employment-oriented policies in order to realise a high rate of employment generation preferably higher than the rate of growth of labour force. The employment policy adopted by the Draft Plan accordingly has three basic ingredients : (a) to adopt employment-intensive sectoral planning, (b) to regulate technological change to protect and enhance employment, and (c) to promote area level planning for full employment In preparing the plan an attempt has been made to give concrete shape to each of the above policies and outline and an investment pattern designed basically to accelerate the growth of employment.

The Draft Plan aims at an overall growth rate of 4.7 per cent per annum, which is considered feasible given the available resources and constraints. It is appreciably higher than the average of 3.5 per cent recorded for a long period in the past.

The most important way in which the Government can influence private demand in the direction of labour intensive goods is to pursue policies which inject massive purchasing power among the poverty groups. To this end, a number of policy measures have been suggested in the Draft Plan A massive irrigation programme is proposed with a higher component of minor irrigation, because irrigation can shift income to the rural poor by increasing the productivity of small farmers and by increasing the demand for hired as well as family labour The need to accelerate land reform is emphasised and the distribution of all farm inputs is intended to be steered more and more in favour of small farms because they absorb more labour per hectare The supply of essential goods through a public distribution system at reasonable prices is also calculated to increase the real income of low income households

Public investment in rural infrastructure and social services has been substantially escalated to increase construction employment as well as indirect permanent employment The Government, apart from influencing private demand, can also reshape its own investments and expenditures so as to increase labour absorption The demand for infrastructure services such as road construction, water supply and social services is not constrained by private purchasing power because all these are provided entirely by the public sector. The construction component of the expansion of these services is enormous This component can create large revolving employment. Indirectly expansion of these services create a large volume of indirect employment. Thus, the construction of roads increase permanent employment in the private transport sector. The expansion in electricity in villages stimulates the power pumping of irrigation water and small scale industrial activities and thereby creates additional indirect employment In view of these considerations a substantial portion of public investment resources have been allocated in the current plan for the expansion of the infrastructure and social services, particularly in rural areas The revised Minimum Needs Programme alone

is expected to create 160 days of employment for about 1 million workers during the next 10 years.

In selected mass consumer goods sectors, an optimum allocation of new capacity between different techniques has been recommended so as to ensure that the growth of employment in each of these sectors is satisfactory. In the field of technological policy, the science and technology research system is being induced to ear-mark a higher proportion of its capacity for the identification and discovery of appropriate techniques which increase productivity without excessive labour displacement in rural and small scale urban activities. In this connection, it is emphasised that the consumer goods sector should record an employment growth rate which is higher than its output growth rate and the country should aim at saving capital which is in short supply.

If the planned pattern of investment and production materialises, it is likely to create 49.3 million additional standard person years of employment. Of this, 22 8 million will be in agriculture and allied sectors as a result of the planned growth in irrigation capacity and in the animal husbandry, fishery and forestry sectors Now labour demand in mining and manufacturing may be about 9 4 million on account of the high growth projected, particularly in the small scale sector The power production programmes, the construction component of the whole plan and the planned expansion of the infrastructure and social services particularly in the rural areas may increase labour demand by 17 1 million.

In addition to production or sector planning, it is proposed that employment opportunities be further increased by means of the preparation and implementation of local full employment plans in 2,000 out of 5,000 blocks in the country in the next five years. Area-oriented schemes, with an allocation of Rs. 2800 crores (including the Hills and Tribal Area allocation) for five years are to be launched for the purpose.

Policy for the educated manpower

The draft Five Year Plan takes a special note of the educated unemployment. It is estimated that as of 1978 about 0 7 million of the 7 million graduates (including engineering diploma holders) are unemployed. Over the Five Year Plan period the stock of graduates is expected to increase by about 2 7 million However, only 2 million can get employment in economic activities. The problem of educated unemployment is thus rather serious

The draft Five Year Plan seeks to attack the problem on the supply side as well as on the demand side It has been observed that in case of graduates the general arts, science and commerce graduates constitute the bulk of unemployed Among specialised graduates such as engineers, agricultural graduates, medical graduates etc unemployment rates are relatively low.

The Draft Plan therefore, proposes to make a determind effort to decelerate the outturn of general arts, science and commerce graduates from the education system and to divert the matriculate population increasingly to non-clerical operations. It suggests regulation of enrolments in the general academic streams of higher secondary and higher education in order to keep down the expansion facilities at these stages to the minimum and to shift the emphasis to vocationalisation at the secondary stage and to the improvement of quality in secondary stage and higher education.

On the demand side the draft plan proposes certain policy measure and programmes. The expansion of the rural infrastructure and social service sector under the Revised and Minimum Needs Programme will employ thousands of educated persons in the coming five years. The new community health workers programme and the nationwide adult education programme should also bring additional income to matriculates and non-matriculates of the educated unemployed. Agricultural, animal husbandry, forestry, fishery and rural development programme and the introduction of full employment planning in 2000 blocks will also generate employment opportunities in a substantial way to the educated unemployed. The huge programmes in power expansion, irrigation and construction will require in a substantial way technically qualified people. It is, however, difficult to quantify the additional employment of matriculates and graduate personnel which other programmes may generate. But the new production targets and investment allocations in the present plan are so much larger than in the past that this additional employment is likely to be quite significant.

Employment of Women

The Draft Plan also discusses the employment situation confronting women and the policy to be adopted for the promotion of women's employment. Women constitute about 87 million of the total labour force of 265 million, that is, nearly a third. In the organised sector, however, women account for only about 12 per cent of the total number employed. Apart from agriculture, the industries or activities in which women workers have as high share of total employment include food processing activities, grain milling, oil crushing, manufacture of daily products, spinning and weaving of textiles, domestic, laundry and sanitation services, manufacture of bidi and coir products, and working in tea plantations. The rate of chronic unemployment is less but the rate of current unemployment is more among women than among men. In fact, women account for nearly 40 per cent of the total current unemployment.

The Draft Plan considers the problem of female employment from the wider view point of the need to raise the status of women.

The measures recommended for promotion of female employment include . (i) expansion and diversification of the education and training opportunities available to women ; (ii) stimulation of the growth of some of the industries and occupations in which women have substantial share in employment , (iii) promotion of self-employment and small industry employment among women by ensuring a reasonable share of credit and other aid for potential women entrepreneurs and women cooperatives ; and (iv) manpower budgeting of the female labour force as a special component in all the comprehensive area development plans.

Removal of Unemployment

The removal of unemployment and significant under-employment within a period of 10 *years is one of the principal objectives of the new plan.*

The employment strategy outlined above for the five year plan 1978—83 is expected to make a major dent into the unemployment situation as a first step towards the goal of completely eliminating unemployment within ten years. In fact, against the background of estimated unemployment of 20.6 million and the estimated addition of 29.5 million to the labour force, which together adds up to about 50 million, the employment expected to be generated during the current five year plan is of the order of 49 3 million standard person years of 273 working days. ☐

A Massive Employment Programme :

National Reconstruction Army

George Fernandes
Union Minister of Industry

Presenting a plan for Massive employment programme, Shri George Fernandes argues in this article that "Asking a man who needs a job today to wait for 10 years is only adding insult to injury. Therefore, not only do we need to impart a sense of urgency to the task of creating jobs, but equally important is this sense of resolve and urgency must be seen and felt by the people. There is no alternative but to tackle this problem on a war footing."

THE DRAFT SIXTH Five Year Plan estimates the level of unemployment in March, 1978 at 20.6 million

I would personally question the estimate of 20 million unemployees in March 1978. The actual level would be more like double this figure, i e. 40 million. In addition, about 6 million would enter the labour market every year thus giving a job requirement for 70 million in the next five years. Whether the plans and programmes envisaged will actually generate this volume of employment can be debated. What is, however, not questionable is the urgent need to take up a massive employment programme immediately.

The effects of unemployment are nowhere more disheartening and depressing than among the youth of this country A feeling of insecurity, followed by dejection and finally total frustration is the lot of thousands of our young people. We have pledged to eradicate unemployment in 10 years. This may be considered a realistic time frame when viewed as part of the impersonal planning process but it can hardly give hope or confidence to those who need a job here and now. Asking a man who needs a job today to wait for 10 years is only adding insult to injury. Therefore, not only do we need to impart a sense of urgency to the task of creating jobs, but equally important is this sense of resolve and urgency must be seen and felt by the people. There is no alternative but to tackle this problem on a war footing

The idea of a National Reconstruction Army is basically to tap this vast potentially or unutilised human energy for productive work. The concept of a national voluntary organisation of disciplined individuals endowed with diverse skills approaching the task of national reconstruction is not a new one but it now needs to be converted into a reality. The constraint is not the lack of work or resources but the absence of organisation and management. *Give the will and the courage to adopt an unconventional strategy, such an organisation can be created and managed efficiently. The programme of work can easily be dovetailed into existing an dprojected plants and programmes with additions or modifications wherever necessary.*

The organisational structure of the National Reconstruction Army will seek a fusion between the concept of an army and the concept of a coordinating agency between individuals and voluntary organisations. It would be a completely voluntary organisation, recruitment to which would be open to any able bodied citizen above the age of 18. A certain minimum level of physical and mental fitness would have to be prescribed. A newly recruited volunteer would sign on for a period of 3 years which will include an intensive training programme ranging from three weeks to twelve weeks before he is actually sent into the field.

The NRA would be patterned on the regular army. Every year a large number of highly trained and disciplined defence personnel are demobbed. **These ex-servicemen** would be the linchpin of the entire organisational structure providing a ready reservoir of trained, disciplined and dedicated personnel. These ex-servicemen would be utilised for manning command positions. The existing infra-structure of organisations like the Home Guards, the National Cadet Corps and similar bodies should also be utilised in this effort. Even recruitment could be done along with recruitment to the regular defence forces at their recruitment centres.

To begin with the objective may be to constitute a work army of one million. Assuming the NRA volunteers would be paid Rs. 100/- per month in cash plus a diet of 400 grams of cereals and 50 grams of pulses per day (which is equivalent to the current per capita availability of cereals and pulses in the country) the total cash cost would work out to amount Rs. 234 crores per annum at present prices. Adding other inputs such as basic implements, equipment, etc. the cost is estimated to about Rs. 300 crores. All of this need not constitute additional cost if the NRA is employed in productive schemes many of which are already included in the Plan. For example, the total provision for rural roads in the next Five Year Plan is Rs, 800 crores; for house sites for landless and rural housing the provision is Rs. 500 crores, and for improvement

The NRA will have a discipline which evolve gradually among comrades seeking to accomplish a specific job. This is part of National building effort. There would be a regular chain of command where officers', seniority and promotion will not depend on anything other than the skills required and the size of the job each Volunteer can take on. The Army will be put in a uniform not ornamental, but just Comfortable cheap working clothes.

It will have a discipline though not as rigorous as that of the army which can only come through long years of training and orientation. But this discipline will gradually evolve among comrades seeking to accomplish a specific job which is part of the total national building effort. There would be a regular chain of command where officers' seniority and promotion will not depend on anything other than the skills required and the size of the job each volunteer can take on. The Army will be put in a uniform—not ornamental, but just comfortable cheap working clothes.

The Army itself would be divided into brigades, of say 5,000 men each and further into battalions of 1,000 men each, companies of 200 men each, platoons of 50 men each and finanally into work details of 10 men each. At each level there would be a complement of officers or motivators of auxillary personnel. At the battalion level, there would be a full fledged field workshop, supply depots, primary medical units and any other specific needs that a particular unit would need for working in a particular area.

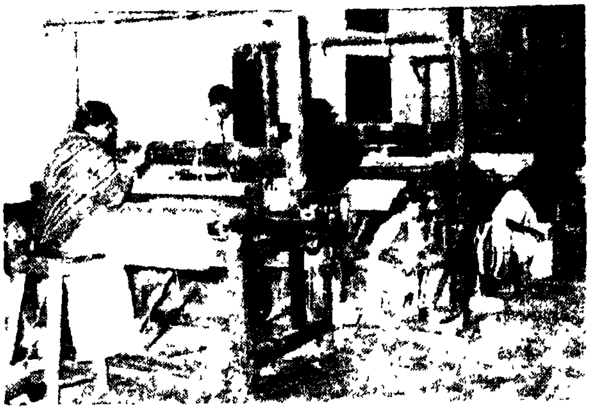
An auxillary bridge of consultants with expertise in diverse subjects like agriculture, community development, rural industry, co-operatives, functional education, literacy, forestry, public health etc. would also have to be formed. This brigade would be on call to render services whenever the Army needs them for specific projects.

of urban slums there is a provision of Rs. 190 crores. Similarly, the NRA could be utilised for minor irrigation and flood control work for which there is a Plan provision of Rs. 2400 crores.

If the total unemployment problem is to be tackled through the NRA, the magnitude of the task both in terms of numbers, geographic area and organisation is stupendous. However, it can be done and done efficiently. **In addition to being a massive employment programme and harnessing valuable human energy for national development, the NRA would help to impart skills and work experience. It will also provide an instrument to involve the people in national building and to create a new awareness giving depth, substance and meaning to the whole idea of participative democracy. An entirely new culture and work ethos, which is so often missing in our national life, would most certainly evolve out of this effort.**

At the Government level the organisation of the NRA would involve several Ministries and the State Governments. The administrative responsibility would also have to be taken either by one of the existing Ministries or through some totally new arrangement. In order to work out operational details and modalities of implementing the programme, I would suggest that a Committee of Ministers may be set up to go into all details.

Essence of New Industrial Policy



Full Employment

Smt. Abha Maiti,
Minister of State for Industry

Smt. Abha Maiti, expresses the view that the old industrial policy made very little impact on unemployment and rural urban disparities. The new policy makes a significant departure to rectify the distortion by giving due attention to the small-scale and tiny sectors which will bring the goal of full employment within the realm of reality in the coming years.

UNEMPLOYMENT IS undoubtedly the most important economic problem that confronts us today. According to current estimates there are about 21 million fully unemployed persons on any typical day and in the next five years, this figure is likely to increase to 23 million. Unemployment means waste of manpower. Persons willing to work, who could produce valuable goods and services, are idle Consequently, the economy produces fewer goods and services than it is capable. Unemployment also means hardship and low standards of living for those who are out of work, and for their families. In fact, unemployment, poverty and inequality are inter-related phenomena and success in solving any one of these problems would imply some success in solving the others.

Types of Unemployment

Though our economy is now modernised and made more self-reliant than what it was before Independence, number of the unemployed and under-employed have grown over the years and more than 40 per cent of the population still lives below the poverty line Unemployment in the Indian situation can be classified in two different categories. In the first come those who are chronically unemployed while in the second category are those who can find employment for some time and not always. The former can be measured in terms of the number of persons wholly unemployed, which was estimated to be around 4 million persons in 1973. The latter is measured in terms of man-days and was equivalent to 18 6 million persons unemployed on a typical day.

Absorption of Increasing Labour Force

Between 1971 and 1978 when the labour force increased by 35 million, non-agricultural activities absorbed only 9 million, of which about half was in the organised sector and the other half in the informal sector. Any employment objective in the Indian context would, therefore, necessarily involve increased labour absorption in agriculture and allied secondary and tertiary activities Yet the cottage and small scale industries cannot be ignored, as after agriculture it is

this sector which holds out the greatest potential for employment. It is, however, widely accepted that the unfavourable land-man ratio which exists in most developing countries would make it difficult for the agricultural sector to provide substantial increases in employment in the years to come. **The only alternative would, therefore, be to develop rural industries in the cottage and small scale sector on a massive scale. Never before either on our plans or in policies has this sector been given the due attention it deserved.** The share of the small scale sector, excluding household industries, fell from 19.5 per cent of the income arising from all industrial production in 1968 to 16 per cent in 1976. The trend urgently needs to be arrested and reversed by a vigorous programme of promotion of small scale and household industries in the rural areas. This is precisely what our new industrial policy seeks to achieve in no uncertain way.

Little Impact of Old Industrial Policy

For the last 20 years or so, Government policy in the sphere of industry has been governed by the Industrial Policy Resolution of 1956. Though some elements of that Resolution in regard to the desirable pattern of Industrial Development are still relevant today, we find that b yand large it has made very little impact on unemployment and rural-urban disparities. During this period, notwithstanding a fairly rapid growth in the non-agricultural sectors no change was observed in the industrial distribution of the work force. The share of mining and manufacturing in the work force has remained stationery around 9 to 10 per cent and the share of tertiary sectors around 16 to 18 per cent. This is in sharp contrast to almost all countries where economic development is associated with a significant increase in these shares. The inference is clear : employment growth in these sectors has been insufficient to absorb an increasing proportion of the labour force Investment and output have grown at a high rate but the product-mix and the technology-mix has been so capital intensive that employment generation did not keep pace. Between 1961 and 1976, for example, in the modern factory sector, investment increased 139 per cent and output 161 per cent but employment increased only 71 per cent. Therefore, employment per unit of gross output decreased by 34 per cent and employment per unit of capital declined by 28 per cent The rate of labour absorption in the organised sector is so small that even if this absorption is miraculously doubled by a phenomenal growth in large scale industry and public services, it would still not employ more than 20 per cent of the annual increase in our labour force. Thus the only hopes of absorbing most of the annual increas in our labour force lies in making employment in small units fuller and more productive, and in choosing a product-mix and technology-mix, even in the organised sector, which absorbs substantially more labour per unit of output and investment

New Industrial Policy

The emphasis of our new industrial policy has, therefore, been shifted to the effective promotion of cottage and small industries, in rural areas and small towns. Nearly 807 items have already been exclusively reserved for production in the small scale sector, and more may be added. It has been decided that an annual review of the reserved industries will be unde taken in order to ensure that reservation accorded the small scale sector is efficient and is also continual expanded as new products and new processes capab of being manufactured in the small scale sector a identified. **Our new policy has also identified a ne sector namely "Tiny Sector" within the small scal industries whose investment in machinery and equip ment is less than Rs. 1 lakh and located in towns wit a population of less than 50,000.** It has been recogni sed that more than even the traditional small scal sector, it is the tiny sector which will have to be pro vided with additional incentives and policy support fo rapid development. This sector covers a wide variet of skills and activities including rural artisanship whicl provide livelihood to millions of house-holds.



New impetus to Cottage and Small scale industries in the rural areas.

The question of providing legislation for the small scale sector is also under the consideration of the Government. In the Industrial Policy Statement it has been specifically mentioned that "Government will consider introducing special legislation for protecting the interests of cottage and household industries with a view to ensuring that these activities which provide self-employment in large numbers get due recognition in our industrial development".

District Industries Centres

In order to minimise the number of contact points that entrepreneurs have to deal with, it has been planned to set up District Industries Centres (DICs) in all the districts of the country. Already nearly 223 DICs have been sanctioned in almost every part of the country. The DICs, when set up in every District of the country, will help to shift the focal point of development of small scale and cottage industries from the big cities and state capitals to the rural areas. In the words of our Industrial Policy Statement of December, 1977, "Under the single roof of the District Industries Centre, all the services and support required by small and village entrepreneurs will be provided. These will include economic investigation of the districts' raw material and other resources, supply of machinery and equipment, provision of raw material and other resources, supply of machinery and equipment, arrangements



A productive small unit with product—mix and technoly—mix generating employment opportunity

'or credit facilities, an effective set up for marketing ınd a cell for quality control, research and extension." ˜ach centre will also have separate wing for catering o the needs of cottage and household industries disinct from small industries. In order to coordinate ınd effectively meet the credit requirements of this ector, the Industrial Development Bank of India has lready taken steps to set up a separate cell. It will losely guide and monitor the entire range of credit acilities offered by other institutions for the small and ottage sector. The Government is also providing ıaximum support for marketing the products of this ector. Measures such as purchase preference and eservation for exclusive purchase by Government)epartments and Public Sector Undertakings have een introduced.

Khadi and Handloom Sectors

The labour intensive khadi and handloom sectors oo have been given top priority in our Industrial and 'extile policies. The Industrial Policy Statement proides that the list of items currently under the purview f the Khadi and Village Industries Commission will e considerably expanded and the organisational strucıre suitably revamped, so that the Commission is ble to perform the role assigned to it more effectively. 'he development of the handloom sector which proides employment to bulk of the people engaged in the production of textiles has also been given due importance. In order to provide protection to the handloom sector, the Government will not permit any expansion in the weaving capacity of the organised mill and powerloom sector. The handloom sector will be given priority in the allocation of yarn spun in the organised sector, and if there is shortage, steps will be taken to increase the spinning capacity. It will also be ensured that the organised mill sector does not provide unfair competition to the handloom sector. Apart from strictly enforcing the existing reservation of items of textiles earmarked for production in the handloom sector, it is planned that the task of producing cheap cloth for the weaker sections of the population would ultimately be entrusted to this sector only within the shortest possible time. This would lead to substantial growth of economic activity and employment in the handloom sector. Already this sector has attained a production level of 80 million square metres of cheap cloth per year.

With these basic features of our Industrial Policy which clearly reflect a pro-employment strategy, there is no reason why we will not be able to achieve our sixth plan objective, namely, removal of unemployment and significant underemployment over the next ten years. What is now called for is an all round commitment to the attainment of this objective ☐

18DPD/78—2

“criticomments”

MISLEADING INDEX OF PERFORMANCE

Recently a customer complained to a newspaper columnist about the working of a bank. The columnist commented: "In India millions of satisfied customers never write a letter of appreciation, while the few who have reason to be disgruntled can create an uproar—a misleading index of performance in the ultimate analysis." (**Economic Times, November 26, 1978**).

These words could well have been written about the Life Insurance Corporation. LIC settles an average 2,000 claims every working day. A very good record. But from the complaints aired in the press, you would think otherwise!

Let's look at the total picture: Last year LIC settled 6.05 lakh claims (value: Rs. 200.26 crores). At the end of March, 1978, only 82,872 claims remained outstanding (value Rs. 31.26 crores). The ratio of outstanding claims to claims intimated during the year was 13.21 per cent by number, and 15.10 per cent by amount.

Is that good or bad? One way to judge is to look at the ratios achieved by private insurers, before nationalisation (Some people think the private sector is more efficient than the public sector). The 1954 figures of seven top insurance companies were:

Company	Percentage of outstanding claims to claims intimated (by amount)
Oriental	36.48
Bombay Mutual	42.47
Bombay Life	49.87
Empire of India	53.27
Hindustan Co-op.	54.31
New India	59.41
National	74.70

(source: Indian Insurance Year Book)

Since then claim amounts have gone up ten-fold. Yet LIC has been able to bring down the ratio of unsettled claims to 15.10 per cent.

Are insurance companies doing better in the United States? Here are some telling figures for 1976.

Company	Ratio of unsettled claims
Prudential	20.10
Equitable	18.01
Metropolitan	16.01

So LIC is not doing too badly. Especially when you consider that the statistics are loaded against LIC. Over 20 per cent of the total year's business is completed in March, the closing month of the financial year. Hence the maturity claims will also be the highest in March. Allow a month to complete the formalities of settling a claim. You will then see that the claims arising in March alone can tilt the ratio against LIC.

But never mind, LIC's top brass themselves admit that the ratio needs to be improved. They now regularly examine why claims remain unpaid. The analysis of claims outstanding on March 31, 1978, showed the following

Causes	No. of claims
At the LIC operating office	
1. Maturity intimation/claim forms not issued	7569
2. Further requirements to be intimated	534
3. Payment pending	480
4. Claim investigation incomplete	1748
5. Requirements for admission of claim met but discharge forms not issued	147
Group total	10478
On the policy-holder's side	
6. Age proof to be given to LIC	551
7. Claim forms/discharge forms/policy documents to be sent to LIC	61,378
8. Required information not sent to LIC	3,315
9. Proof of title not produced	2,698
Group total	67,942
Miscellaneous	
Policy-holders/claimants not traceable	2270
Claims pending for other requirements (exchange permit, etc.)	455
Claims under payment (educational annuities, etc.)	244
Replies awaited from doctors, etc. (death claims)	1483
Group total	4452
GRAND TOTAL	82,872

Thus, 82 per cent of the outstanding claims remained outstanding because the policy-holder/claimant had yet to meet a necessary requirement. Thirteen per cent could be blamed on LIC. The Corporation has taken several steps to improve matters.

1. Formalities are being relaxed in apparently bona fide cases. The requirement of proof of age is being dispensed with for policies of small amounts; small claims are being paid by money order to eliminate the need for an advance receipt, legal evidence of title is being waived if there is no dispute among heirs; attestation formalities have been made easier.

2. A cell has been created within the Corporation to speed up claim settlements. Causes of delay are regularly analysed and rectified where possible. Officials are sent after claimants who do not respond, to help them complete the formalities (Can you think of any other financial institution which does this?) Several LIC offices now have been given more powers to settle claims quickly.

3. An increasing proportion of maturity claims is now settled on the due date itself. They start corresponding with the claimant a month or two in advance. With all the needed documents arriving well in time, they have no problem issuing the cheque on the due date (LIC is the only financial institution which goes after clients thus to settle their dues.)

4. A campaign has been launched to make sure that policy-holders know what is required of them—like submitting proof of age, nominating the beneficiary and telling LIC about any change of address.

LIC has been able to bring down the ratio of unsettled claims from 33.99 per cent in 1967-68 to 15.10 per cent in 1977-78—a good record by itself. But the Corporation is not resting on its oars. There is continuous endeavour to improve on this ratio.

Data Base for Employment and Manpower Planning

M. V. S. Rao
Adviser, Manpower Planning And Employment
Planning Commission

Accurate and reliable data base for the working population is an essential pre-requisite for any sort of planning, more so for employment and manpower planning. Unfortunately neither the 1961 census nor the 1971 census provides an acceptable count of the working population. In terms of conceptual clarity the 27th round of national sample survey was found more acceptable for the estimate of employment and unemployment in formulating the current five year plan but the position remains unsatisfactory. There has been much of conceptual debate but not much of concrete action. The author presents a few suggestions for data development and urges a determined bid to organise systematic collection and computation of data on employment and unemployment.

PLANING FOR full employment needs, as a pre-requisite, an accurate and reliable data base concerning the working population. Of particular interest are the data on the size and structure of the labour force, the extent of unemployment and under-employment, wages and earnings, investment-employment, norms, labour-output coefficients, the likely trend in the size and structure of the population, the likely output of educational and training institutions, etc. Although, India has had five Five Year Plans, and an enormous expansion of the satistical and research activities, the data base for employment and manpower planning continues to be rather weak, and the planners have had to make a series of assumptions, approximations, estimates and "Guestimates" in drawing up the employment plans. Once the plan is drawn up, there is no reliable means of monitoring the progress in terms of employment generation.

The current Five Year Plan, 1978—83, has laid great emphasis on employment generation and is committed to the objective of removal of unemployment and significant under-employment within a period of ten years. It has adopted as its strategy, employment-intensive sectoral planning, regulation of technological change to protect and enhance employment, and promotion of area planning for full employment. In this context, a review of the data base for employment and manpower planning is of special interest.

Labour force in Decennial Census

The basic information on the size and structure of the labour force ought to be available from the decennial population census. The population census of 1951 classified the population as self-supporting persons,, earning dependants and non-earning dependants. Since such a classification would not directly identify the working population, the census of 1961 made a direct attempt to enumerate the workers. The definition adopted for the enumeration of workers was, however, somewhat loose and resulted in what was then considered an over-enumeration of workers, including, as it did, a large number of marginal workers whose economic contribution was not very significant. The census of 1971, which repeated the exercise, however, adopted a comparatively restrictive approach and resulted in a serious under-enumeration which excluded most of the marginal workers, specially in agriculture and household industry, and underestimated, in particular, female participation in economic activities. Neither the 1961 census nor the 1971 census could thus provide an acceptable count of the working population.

National Sample Survey

The other major source of information on the labour force is the National Sample Survey. The NSS has been conducting surveys on labour force, employment and unemployment for about a quarter of a century. In its early rounds, it experimented with a variety of concepts, definitions and procedures and settled down around the beginning of the sixties with the standards for surveys on labour force, employment and unemployment issued by the Central Statistical Organisation. But soon, it realised that the standards, which clearly distinguished between the urban and rural sectors of the economy, were nonetheless inapplicable to the rural sector. Consequently, it discontinued the rural survey, but continued the urban labour force survey as an annual feature Later, it was apparently realised that even the urban survey lacked conceptual clarity and was hence discontinued.

After a clean break of a few years, the NSS initiated a new comprehensive survey of employment and unemployment as a quinquennial feature effective from its 27th round (1972-73). The survey has since been repeated in its 32nd round (1977-78). The results of the 27th round were found to be more acceptable than those of the two preceding censuses in terms of conceptual clarity and hence accepted as the basis for the estimation not only of the labour force but also of employment and unemployment in formulating the current Five Year Plan. The labour force has been estimated in terms of the usual status over a long period. The age-sex-area-specific labour force particiption rates have been applied to be independently estimated population for the beginning and the end of the Plan period to derive the relevant estimates of the labour force

Employment Statistics

The current statistics of employment are confined to the organised sector The series with the widest coverage is the one produced quarterly by the Directorate-General of Employment & Training in respect of non-agricultural establishments employing 10 workers or more in the private sector and all establishments in the public sector. The series, however, covers hardly one-tenth of the total employed labour force and just about one-third of those employed in the non-agricultural sector. Statistics are also available in respect of various branches of the non-agricultural sector, such as plantations, mines, factories, shops and commercial establishments, banks and insurance companies, railways and state transport undertakings posts and telegraphs, educational and health services, Central and State Governments, etc., but those are usually partial, incomplete and subject to various limitations. Current information cannot be expected in any case in respect of the self-employed population from this type of sources, but the fact is that current information is not available even in respect of all the employees, particularly in the unorganised sector.

The recent Economic Census of the non-agricultural establishments conducted by the CSD, however, provides for the first time a comprehensive count of employees in non-agricultural establishments. The Census of Small Scale Industries conducted in 1973 by the Development Commissioner for Small Scale Industries also gave some data on employment in respect of registered industry unit with a capital of less than Rs. 7.5 lakhs. A survey of manufacturing units in the unorganised sector sponsored by the Ministry of Industrial Development, carried out by the States during 1972-73 and coordinated by the CSD, provides data on employment in non-factory establishments employing five or more workers. These are one-time estimates but it may be hoped that at least the Economic Census will be repeated at periodic intervals.

Unemployment Situation

The employment exchange registrations provide some information on the unemployment situation. The number of applicants on the live registers, which has been growing by leaps and bounds in recent years, however, suffers from serious limitations and needs to be viewed with caution. In particular, it is to be noted that those who register themselves are not all totally unemployed and those who may be engaged in some casual work, wage-paid or own account, may be seeking regular work through the employment exchange. Those who are employed in lower jobs may also be looking for better jobs. Some of the applicants are registered at more than one exchange in order to improve the chances of an early placement, thus inflating the total number on the live registers. The expansion of the network of employment exchanges, taking the services closer to the needy may itself be responsible to some extent for the increase in the registration. On the other hand, it is also to be noted that not all the unemployed persons register themselves with exchange. There are persons with high qualifications who manage to secure employment through the Service Commissions, public advertisements and direct approaches to the prospective employers. There are many unemployed persons who do not bother to register themselves with the exchanges either because they are unaware of them or because the exchanges are too far away. There may also be persons who are indifferent to the employment exchanges, because of the fact that the placements effected by the exchanges are too few in relation to the applications. The employment exchange data are thus generally unsuitable as a measure or even as an indicator of the trend of unemployment.

The Draft Five Year Plan has therefore, relied for its unemployment estimates on the 27th round of the NSS. Assuming that unemployment ratios ob-

served in that round are still applicable, three types of estimates have been made : the chronically unemployed (i.e. those who, not having had any employment for a long period, were available for employment), the currently unemployed (i.e. the average number of those who, not having had any work for a whole week, were available for employment), and the extent of daily unemployment in terms of person-years, which could numerically be equated to the average daily unemployment. The estimate of daily unemployment is perhaps the most comprehensive that could be had, and is in fact a composite measure of unemployment and visible underemployment. The main limitation of this measure is that the rate of unemployment observed in 1972-73 may not be applicable to the present. The results of the 32nd round (1977-78) are, therefore, to be awaited with interest.

Unemployment estimates are required not only at the national level but also at the state and, if possible, at lower levels, and for various seasons since much of the unemployment is seasonal. The data are also required in respect of various groups, such as the educated, the females and the weaker sections of the population whose problems need special consideration. The National Sample Survey could provide sufficient information on those aspects, but the tabulations available are often limited in scope and make it difficult to make a thorough assessment of the situation

Wages and earnings

Systematic information on wages and earnings is again confined to certain branches of the organised sector, such as factories and mines, but some sort of data can also be gathered in respect of Central and State Governments, railways, posts and telegraphs, educational institutions, etc Some data are available in respect of agriculture and plantations, but these are not comprehensive. Wage rates fixed under the Minimum Wages Act are published, but these cannot be consolidated in a meaningful manner.

The occupational wage surveys conducted by the Labour Bureau provide detailed information on occupational wages in respect of several industries and an annual index of wage rates it published. This, in comparison with the consumer price index for industrial workers, can provide an index of real wages.

The Rural Labour Enquiries conducted periodically by the Labour Bureau thhrough the agency of the National Sample Survey provide estimates of the wage earnings of agricultural and non-agricultural labour in rural areas. The NSS surveys on household and small scale industries provide some information on the earnings of hired workers. The employment surveys of the NSS also provide some data on the average earnings of employees in various sectors.

Notwithstanding the mass of infor nation on wages and earnings available from various sources, the overall impression one gets about the nature and scope of the information is that it is sketchy and unsystematic. Efforts are, therefore, needed to systematise the information

Labour-output relationship

In planning for employment one has to relate the employment targets In the past, planners used to estimate the employment potential of the Plan in terms of certain investment-employment norms. In the current Plan, however, the employment potential has been estimated in terms of certain labour coefficients which indicate the labour requirement per unit of output. The labour coefficients have been derived from various sources of information including farm management studies, cost of cultivation studies, live stock censuses, industrial surveys, NSS surveys on household industry, etc. Such sources of information providing exact relationships between the labour input and output are, however, few and limited in scope. In the absence of such information, in several cases, one has to rely on independent estimates of employment and output for the derivation of such coefficients, which is not entirely a satisfactory procedure. The sample surveys expected to follow the recent Economic Census may provide some information on this aspect in respect of most of the non-agricultural activities. Nonetheless, there seems to be considerable scope for intensive research in this area.

Population Projections

In planning for employment, one has naturally to project the current trends into the future. Of particular importance is an accurate projection of the labour force which depends to a large extent on the projection of the population in size and structure, and its distribution over the rural and urban areas, as well as by States and Union Territories. The population projection in its turn depends on certain assumptions relating to fertility and mortality, international migration having been assumed to be insignificant. The fertility assumptions which depend largely on the performance o fthe family planning programme may or may not come true and the achievement may not be uniform over all the States. The mortality assumptions may also turn out to be somewhat optimistic. The rural-urban breakdown of the population projection, which is based on an extrapolation of the past trends may have to be moderated in the context of the new emphasis on rural development. There is thus some amount of uncertainty in regard to the population projection which may have its effect on the labour force projection.

In projecting the labour force, one has also to make some assumptions regarding the age-sex area specific labour force participation rates. A comparable series, if available over time, would facilitate extrapolation of those rates with some confidence. In the absence of such a series, it would be difficult to make any assumptions regarding likely changes in participation rates. The only alternative is, therefore, to assume the continuance of the same participation rates over the period of projection. If the period is short, such an assumption may not be unreasonable, but if it is long, the validity of such an assumption would be questionable The Draft Plan, 1978-83 has, in the absence of a better alternative, assumed the applicability of the NSS participation rates of 1972-73 to 1977-78 as well as 1982-83. The assumption may have to be reviewed in the light of the results of the 32nd round of the NSS (1977-78) when they are available.

Educated manpower

The educated manpower needs special consideration in employment planning. On the one hand, it has to be ensured that the professional, scientific and technical manpower required for the envisaged level and pattern of economic and social development would be available. On the other, it has also to be ensured that the available professional, scientific and technical manpower is fully utilised and put to optimum use. Educated manpower is an expensive input and educa-

ted unemployment could be an embarassing waste. An accurate manpower budgeting is, therefore, an indispensable element in planning.

The 1971 census of population has provided an enumeration of educated manpower. The National Sample Survey also provides estimates of labour force, employment and unemployment by educational categories, but the numbers thus estimated seem to be rather low. For current estimates of educated manpower, one has, therefore, to depend on the census count supplemented by current statistics of graduate outturn and assumed rates of attrition. Statistics of graduate enrolment and outturn available from the Ministry of Education seem to be fairly reliable although one is often confronted with certain missing links, such as year-wise enrolments, drop-outs, etc. The main difficulty is in regard to data on attrition on account of mortality, withdrawal, separation, retirement and migration Available data, even on general mortality, are basically deficient Data on withdrawals, separations and retirements are also not available, but the available data on labour force participation among the educated can be taken as a composite indication of those factors. Migration among the professional, scientific and technical categories has assumed considerable importance in recent years, but no accurate data are available on this aspect. In the absence of appropriate data, assumptions are made in respect of various categories.

For the estimation of unemployment among graduate manpower, two sources of data are available . the NSS and the employment exchanges. Although numerical estimates based on the NSS seem to be rather low, the observed percentage of unemployment among the graduates seems to be acceptable at an overall level. The accuracy of the estimates in respect of the various graduate categories nonetheless calls for scrutiny. The smaller the category, the larger may be the error involved The alternative source, namely, the live register of the employment exchanges, suffers from the limitations already mentioned above. Surveys are, however, conducted from time to time by the Central and State Directorates of Employment Exchanges to determine the proportion of employed registrants, the extent of multiple registration, etc. The NSS surveys also provide some information on the proportion of the unemployed who register with the employment exchanges. These data can be utilised for the adjustment of the five registers to obtain a more accurate assessment of the level of unemployment, especially among graduates, but one cannot be too sure of the accuracy of the correction factors so derived. The extent of employment and multiple registration among the applicants may in fact be difficult to ascertain. In the circumstances, one may have to utilise a judicious combination of both the sources of data for an acceptable assessment of the situation

Data for monoitoring

Planning is not an end in itself. It is a means towards the desired trend of the implementation of the plan and its impact on the employment situation, therefore, needs to be closely watched. The available statistics do not, however, permit such a close watch.

Unlike the sectoral plans, which have their own mechanisms, an employment plan is all-pervasive and does not have its own mechanism. It cannot, therefore, be monitored in the same way as other sectoral programmes.

Employment generation is essentially, by and larg a by-product of the implementation of various sec toral programmes. A programme-oriented scheme fo monitoring has, therefore, necessarily to be built int the scheme for monitoring sectoral programmes. It i to be recognised, however, that the scop of such a monitoring system is bound to b limited and can at best measure the direct employ ment generated in the operation of the various sectora programmes. The impact of the programmes on th economy in general cannot be measured through suc a scheme. It can at best be estimated by the use o some norms and coefficients Nonetheless, a schem for monitoring the generation of direct employmen could well be a valuable tool for administrative control

The total impact of the plan on the employmen situation can be measured only through a curren household survey of employment and unemploymen The present system of quinquennial surveys can a best provide a post facto assessment of the situation For current monitoring of the situation, a curren annual survey is inescapable Such a survey should b able to provide current estimates of employment an unemployment at the national and State levels wit reasonable precision.

The national survey could be supplemented b block level surveys in a sample of selected blocks fo

Planning is not an end in itself, it is a means towards the desired trend of the implementation of the plan and its impact on the employment situation, therefore, needs to be closely watched.

a more intensive monitoring of the progress at the loca level. The sample should include a stratified selectio of blocks chosen for intensive area plannings as wel as those not so covered.

The current statistics of non-agricultural employ ment in the public and private sectors collected b the Directorate-General of Employment and Trainin should be expanded to cover smaller establishment on a sample basis The list of establishments provide by the Economic Census could be used as a frame fo such a sample

One of the inscrutable sectors which escapes al such surveys is construction. A special scheme has t be devised for the estimation of current employmen in construction activities

The above review touches briefly on the data re quirements and availability for employment and man power planning and presents a few suggestions fo data development in a general way Development o statistics on employment and unemployment ha attracted considerable attention over the last thre decades, but the position still remains unsatisfactory There has been much of conceptual debate but no much of concrete action. The time has come for a determined bid to organise systematic collection an compilation of data on employment and unemploy ment. ☐

AMONG THE VARIOUS rural oriented programmes the one that has recently generated considerable enthusiasm is the Government's Food for Work Programme, FWP in short. With comfortable food stocks in the country, the programme has been taken up as an integral part of the strategy for a direct attack on the problem of rural unemployment and poverty. From a modest beginning in 1977-78, the FWP has already developed into a big programme and has come to be regarded as an important instrument of rural development.

Employment Generation

Introduced in April 1977 as a non-Plan scheme for the utilisation of a part of surplus foodgrains for productive purposes, the FWP was designed to augment the non-plan funds of the State Governments for the improved maintenance of public and community works, on which substantial investment had already been made, and for generating gainful employment among the rural people. The scheme has since been modified as a Plan scheme to include both non-plan and Plan works—old, on-going or new— thereby considerably expanding its scope. Compared with a budgetary allocation of Rs. 20 crores for this programme during 1977-78, the anticipated expenditure during 1978-79 is likely to be over Rs. 125 crores. Expressed in quantitative terms, over 1 million tonnes of foodgrains is expected to be supplied to the State under this programme during 1978-79 as against 0.20 million tonnes supplied during the previous year. This shows a growing enthusiasm and awareness among the States of the potential that the programme has for accelerating employment generation in the rural areas The basic objectives of the programme are :—

(i) to generate additional gainful employment for a large number of unemployed and under-employed persons, both men and women, in the rural areas so as to improve their incomes and their nutritional levels ; and

(ii) to maintain and create durable community assets and strengthen the rural infrastructure with a view to enhancing production and improving the standard of living.

The programme has a wide scope and many types of works can be taken up through it, provided they are productive in nature and lead to the creation and improvement of durable assets for the benefit of the community Works which can be undertaken under this programme relate to major, medium and minor irrigation ; flood protection, drainage and anti-water logging ; soil and water conservation ; land reclamation ; afforestation and social forestry on Government and community lands ; construction of intermediate and main drains, field channels, land leveling etc. in the command areas of irrigation projects ; cleaning and desilting of water courses ; roads including state Highways ; school bulidings, panchayat ghars, community centres ; drinking water wells belonging to Government and local bodies, provision of village pond, restoration of existing tank for supply of drinking water and the like.

Utilisation of Foodgrains Assistance

Foodgrains assistance under this programme can be utilised for Government and community works, but not for the creation, improvement or repair of any private asset. However, as a concession, it has been decided that subsidies which are available to small and marginal farmers and agricultural labourers as well as scheduled castes and scheduled tribes for the creation, improvement or repair of private assets, can be paid in foodgrains, in part or full, under this programme This will enable the States to enlarge the various programmes under which these subsidies are available and to cover a larger number of the target group population.

Food For Work Programme

An Employment Booster

S. K. Mitra

Deputy Adviser, Agriculture and Rural Development Division, Planning Commission.

A special feature of this scheme is the provision of additional resources to the States. Foodgrains under this scheme are supplied to the State Governments/ Union Territories free of cost for supplementing their budgetary provision for on-going plan and non-plan schemes being implemented by them and for new items of capital works. Since the State Governments do not have to pay anything for the foodgrains, this is purely an additional resource to them over and above their budgetary outlays.

Cash Component

Apart from the foodgrains made available for the execution of works, the State Governments are required to provide the cash component for these works. This is because it may not always be possible to pay wages fully in kind as the labour would require some cash for purchase of their daily needs Most of the works will also require materials like cement, bricks etc and tools, implements and machinery. Some cost is also involved for the overheads on staff and vehicles. The State Governments are also required to bear the cost on transport, storage and distribution of foodgrains This, while the foodgrains are being given to the States as an additional resource, the cash component is being met by them or the local bodies themselves. With the cash component, the total investment may go up to Rs. 200 crores during the current year.

An important aspect of the programme is that Panchayats have been enabled to participate in the execution of works. District Magistrates at their own level can allot to each Panchayat for any of their schemes

a quantity up to 10 tonnes of foodgrains. In West **Bengal,** village panchayats are being involved in the execution of works in their areas under an ambitious programme of rural works for which foodgrains from the FWP are to be utilised. A distinct advantage of this measure is the involvement of the local people in the development effort and the creation of assets which directly benefit the local population. It would generate a feeling of participation and enthusiasm, which are necessary for the success of any development plan.

Voluntary organisations of standing and repute are also being entrusted with the execution of works under the FWP. Notable examples are Gadadhar Mishra Smarak Nidhi, Banvasi Seva Kendra and Bihar Relief Committee in the State of Bihar and Banvasi Seva Ashram in the State of Uttar Pradesh.

Participating Stages and Territories

At present 19 States and Union Territories are participating in the programme. Several of them have undertaken works under this programme in a big way. Among them are Orissa, West Bengal, Andhra Pradesh, Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. Other States are also expanding the programme. In Maharashtra the Food for Work Programme has been dovetailed with the Employment Guarantee Scheme of that State, which has enabled that State to enlarge their programme and provide employment to a much larger number of persons. The progress achieved in employment generation in some of the States is indicated below :

(In lakh mandays)

State	1977-78	1978-79 (Upto Sep. '78)
Andhra Pradesh		49.4
Bihar	14 8	77.7
Gujarat	—	37 8
Karnataka	5.0	0 9
Kerala	21 4	NR
Madhya Pradesh	2 2	NR
	(Lakh persons)	
Orissa	68 7	175 4
Uttar Pradesh	58 19	27 5
Rajasthan	6 9	NR
West Bengal	218 4	67 6

NR—Report not received.

The FWP is also being utilised for an interesting pilot project started in four States, viz, Gujarat, Orissa, Maharashtra and Uttar Pradesh. Assisted by the Bharatiya Agro-Industries Foundation and Mafatlal Group of Companies, areas have been selected in these four States for a combined programme of social forestry, cross-breeding of cows and the FWP. In each project area, 5,000 families belonging to the weakest sections are to be rehabilitated through the integration of animal husbandry development and raising of fodder trees in waste lands and degraded forest areas. Each family will be provided with productive work which assist in developing forest on 1-1|2 acres of land and fodder plantation on 1 acre of land. This 2-1|2 acres of land is being provided by the State Government from its degraded forest or revenue kharab land. The family will raise seedlings of various species of plants specified by the Forest Department and take care of the same for a period of 1 to 3 years and transplant the seedlings in 1-1|2 acres of fore area. The family labour would also be utilised t raise Kubabul and other fodder plant species on acre of land and the family will be entitled to th products of this one acre of land (fodder plantation During this period of three years, each family of th rural poor will be provided with 10 Kgs. of food grains and 2 Kgs. of nutrient food per week. Simultaneously, the local cows with the family will be cross bred so that in course of three years the farmer wil have at least one cross-bred cow in milk and nutrien fodder from one acre of land. This will provide hin with a suitable income. In this manner, two objectives are simultaneously fulfilled, viz., to raise fores plantations and providing an economic base to the family.

Wide Acceptance

The Food for Work Programme is finding wider acceptance. There are demands from the States for the allocation of additional foodgrains so that they can take up programmes with foodgrains assistance on a large scale. The target of one million tonnes of foodgrains assistance this year is likely to be exceeded, implying a net addition to the resources of the States of over Rs. 125 crores during the current financial year for various development works. The FWP may become even bigger next year as more States take up the programme.

It has been argued by some that valuable food resources are being frittered away and this may lead to difficulties if the crop situation is not good. First of all, the crop prospects during the current year are good and it should be possible to continue the programme during the next year on a bigger scale. Presently our foodstocks are around 17-18 million tonnes The procurement of kharif cereals during the current year has been larger than in the previous year and the prospects of procurement of wheat are also bright in view of the larger crop expected In such circumstances, when our foodstocks are likely to grow, the utilisation of a part of the stocks for the FWP does not appear to pose any problem, at least in the near future Instead, the foodstocks are being fruitfully utilised for fulfilling the main objectives of the Plan, i e, employment generation and meeting a basic need of the vulnerable sections of the rural population Further, our agricultural production base is stronger than before and with the thrust given to agricultural development in our five year plan 1978—83, particularly the rapid development of irrigation potential, the base will become even stronger. Our procurement planning, if necessary, could also be suitably oriented to expand and implement this programme.

Apart from generating additional employment opportunities, the FWP has meant indirect benefits both to the community as well as the poorer sections of the population The various works, which had been created with large investments over the earlier Plans and which had not been properly maintained, have begun to receive attention thereby helping in the better utilisation of the productive assets. Another important benefit of the scheme is that the vulnerable sections of the society are being provided one of the basic needs of consumption i e cereals, at a reasonable price

Proper implementation

The success of the FWP will depend on the imaginative handling and proper implementation by the States and Union Territories. The selection of the works

(Continued on page 53)

Area Planning for Full Employment

K. P A. Menon

Additional Secretary,
Department of Rural Development,
Ministry of Agriculture and Irrigation.

PROVISION OF AN amount of Rs. 20 crore under a new head in a budget of Rs. 18,417 crore is not a big thing by itself. The significance of this gesture lies in the fact that the provision is for "Area Planning for Full Employment". It is an attempt to translate into action the present government's plan for *providing full employment within a definite timeframe.* While presenting the Union budget for the year 1978-79, the Finance Minister made the following pointed reference to the strategy of decentralized planning for achieving full employment in rural areas—

> "In the new planning strategy, block development will be a major instrument for achieving full employment in rural areas in a time bound programme The details of this programme are being worked out. In the meanwhile, I have made a token provision of Rs 20 crore for this programme. This provision will be enlarged as the full details of the programme are known"

It will, therefore, appear that an attempt was being made for achieving full employment within a definite timeframe and area planning was to be used as the means of achieving the objective.

A Fresh Beginning

India can claim to be one of the first among the developing nations to accept the concept of planned economy. Even at the time of formulating the First Five Year Plan the planners had recognised the need for involving the rural population in the process of planning their own welfare measures. The country has, no doubt, acquired both experience and expertise in the field of economic planning but the process remained confined to the National level for a long time States have also been preparing their own plans keeping in mind national policies, priorities and targets as well as a viable economic model that could be feasible at the State level. Though attempts have been made to have District level plans in certain States or under certain specific programmes, we cannot claim that the progress has been satisfactory or the process of decentralization has really gone beyond the State level

The issue of area planning at different levels came into sharp focus following the decision of the government to have an intensive rural development programme aimed at full employment within a definite timeframe of ten years. Addressing the Seminar on Block Level Planning for Full Employment held at New Delhi, Prof. D. T. Lakdawala, Deputy Chairman, Planning Commission, mentioned that "area planning had the great advantage of compelling the planners to look more closely and concretely at the problems at local levels and to devise measures for the optimal utilisation of the natural and manpower resources to suit the local potentials, needs and problems". Addressing the same seminar the Prime Minister referred to the inadequate attention given to rural development and deteriorating problems like disruption of life in the countryside and the exodus of the rural population to the towns which resulted in the creation of slums. Referring to block level planning, he mentioned that plans unrelated to resources available had no relevance. Block level plans must be essentially practicable so that they are capable of realisation, acceptable to the people for whom they were aimed and related to the resources available in the country. He also felt that the non-official agencies would have to be involved in the whole process since they could make the average villager interested in the programme and take to it enthusiastically and willingly.

The Seminar on 'Block Level Planning for Full Employment' was the beginning of a chain of events all of which had a great bearing on area planning A High Level Committee appointed to study the working of the panchayati-raj institutions and the role they should play in a decentralized system of planning submitted its report in August 1978 Working Group under the chairmanship of Prof. M. L. Dantwala has studied in depth various aspects of block level planning and given their recommendations based upon which detailed guidelines have been prepared for block level planning Another committee headed by Shri B. Sivaraman, Member of the Planning Commission, has made certain recommendations regarding the role of voluntary organizations in implementation of block level plans and programmes of rural development.

Blocks as unit of Planning

The new budget provision of Rs. 20 crore was primarily meant for meeting the requirements of 300 new blocks selected from areas where no special programmes of rural development had been operating in the past. This will, however, give one the impression that area planning for full employment is to be confined to only 300 new blocks during the year. This is far from being the correct position *In fact, an intensification of efforts in the field of rural development and a march towards the goal of full employment had already started in 2,000 out of approximately 3,000 blocks covered by the three special programmes of rural development, namely, the Small Farmers Development Agency, the Drought Prone Areas Programme and the Command Area Development Programme.*

The Small Farmers Development Agency Programme which has been made into a composite programme covering small and marginal farmers as well as agricultural Labourers is essentially a beneficiary-oriented programme with the district as a unit in most cases. The planning and implementing agency was always at the district level and the programme was expected to cover approximately 50,000 families of identified beneficiaries during the project period It cannot be denied that a large number of beneficiaries belonging to these groups have benefitted, from various programme like minor irrigation, dairying, poultry and various types of subsidiary occupations. *Out of approximately 16.25 million participants identified, more than 7 million have*

been enrolled as members of cooperative societies. Number of families who have benefitted from minor irrigation programmes comes to more than 7 lakhs Nearly about half a million families were brought under milch cattle programme and more than 2 lakh under other programmes of animal husbandry The weakness of the programme, however, lay in the fact that there was no mechanism to ensure that each family included as a beneficiary under the programe is taken above the poverty line, within a specified period. This is what is proposed to be done under the new programme of integrated rural development.

Block has been taken as an important unit for the planning and implementation of the new programme of integrated rural development. There has been a lot of controversy regarding the propriety of taking the block as a unit of planning. Many experts were in favour of taking the district as a unit of planning since the process of planning called for certain types of facilities and expertise and it would have been a wasteful exercise to build up planning units at the block level. The Dantwala Working Group has adequately dealt with these aspects and made it very clear that the district and block level planning should be visualised as part of the same exercise. In the opinion of the Working Group the remoteness of the planning agencies from areas of implementation and the vastness of geographical coverage had been hampering the matching of sectoral financial allocations with location specific needs as well as potential and coming in the way of proper distribution of the gains of development. The main purpose of block level planning is in their opinion to accelerate the process of decentralisation in the hope that a more systematic planning effort with a smaller coverage will not only help to speed up the development process but also improve it qualitatively in the sense of making it more responsive to the needs of the community.

Referring to District Level Planning, the Draft Five Year Plan (1978—83) mentions that it will have to be both a resource development as well as an infrastructure plan for supporting the production-cum-employment thrust of the block level planning. The infrastructure required for the various block level plans, the magnitude of the same and the locations of the institutional centres will be worked out for optimum support to the block level plans. The district plan will also take into consideration the Institutional support available, input services and the marketing facilities that have to be developed.

The Dantwala Working Group has also made it clear that the process of planning cannot stop at the block level. Block level planning is not to be viewed as an isolated exercise but as a link in a hierarchy of levels from a cluster of villages below the block level to the district, regional and state level. In a way this fits in with the concept of the Mandal Panchayats of the Asoka Mehta Committee on Panchayti Raj Institutions. A key role is expected to be played by the Zilla Parishads in the process of planning and implementation of all programmes. A process of administrative decentralization had already started at the district level and competent experts of the different departments are already available there. District Industries Centres are being set up by the Ministry of Industry which will have a component of experts with different specialisation.

The Dantwala Working Group has recommended the establishment of a planning unit only at the district



A good crossbreed heifer which can be developed eve from a scrup cow is a new capital which can give farmer a good income if he has the necessary Fodde base.

level and not below. This could be a peripatetic uni which could go to the different blocks and give exper guidance in the preparation of block level plans. Th planning unit is to be headed by a Chief Plannin Officer who himself should be a person who can co ordinate and guide the entire planning team under hin and also coordinate the work of the planning team witl that of the departmental officers. Therefore, it goe without saying that he should be a man of sufficien stature and technical competence. The Group has als suggested that the Chief Planning Officer should b assisted by the following core staff of technica officers—

(1) Economist/Statistician (Project formulatio and evaluation);
(2) Cartographer/Geographer ;
(3) Agronomist ;
(4) Engineer (Irrigation/Civil) ;
(5) Industry Officer (Small and Cottage Industries) ;
(6) Credit Planning Officer ;

The Dantwala Working Group had no reservations regarding the role of Panchayati Raj Institutions in the planning exercise. They also felt that active involvement of panchayati raj institutions in the planning process will provide a better climate for people's participation in the implementation of the plan, a condition crucial to its success. It was, however, necessary to ensure that these people's organisations do not get dominated by vested interests and prevent the flow of benefits to the weaker sections of the community. The Committee has also hinted at the possibility of a form of local government "which would satisfy the democratic aspirations of the elected representatives and give them an executive role and at the same time gives an important place to the administrator".

Coverage of the Programme

During the current financial year, the process of area planning with the block as a unit is expected to be taken up in 2300 blocks all over the country. Since detailed guidelines for block level planning are only getting ready, it will not be possible to start with a block plan in its proper sense at this stage. The block

...istration is expected to identify at least 300 to ...beneficiaries from the target groups with a view to ...g them above the poverty line. Schemes that can ...ken up under the programme of integrated rural ...lopment include all those schemes which were eligi... for consideration under any of the beneficiary—...nted or area based programmes as in the past. 300 new blocks are expected to be added every year thereby taking the total coverage to 3,500 out of 5,000 blocks in the country by the end of the Sixth Five Year Plan period. Two thousand blocks out of these would have got the full impact of the programme for a period of four to five years and other blocks will be at different stages of development.

Contents of the Programme

Integrated Rural Development will cover the following major sectors (i) Agriculture, including animal husbandry, fisheries and horticulture; (ii) Village and cottage industries and tiny industries; (ii) Tertiary sector employment for the various services that are necessary for the achievement of production and distribution in the fields of comprehensive agriculture and rural industries ; (iv) Labour mobilisation, training in skills opportunity. Opportunities available in each one of these sectors will have to be examined in detail and a proper plan suitable for the area designed carefully if integrated rural development is to achieve anything substantial.

In the past, land has been considered as the capital base for all agricultural development programmes. Since modern technology is not sensitive to the size of the farm, it is possible for a family with a small holding of reasonable size to be above the poverty line if irrigation facilities and credit needed for all inputs are made available. Unfortunately, there are millions of farms in the country whose size is so small that they cannot expect to earn a decent living even if they resort to intensive agriculture. There are vast areas where irrigation facilities also will not be available. Moreover, since growth will be proportionate to the area used, the farmers with larger holdings will get richer compared to those with small holdings. Persons with uneconomic holdings will, therefore, have to go in for a different capital base.

Certain new developments in animal husbandry and pisciculture have now given a capital base which is not limited to land. A good cross-bred heifer which can be developed even from a scrub cow is a new capital which can give a farmer a good income if he has the necessary fodder base. Again, a farmer with one acre of land in a situation where agriculture cannot give him a reasonable income can derive a substantial income from pisciculture, inland or brackish. The fodder base can be augmented by tying up the animal husbandry programme with programmes of social forestry.

In respect of persons with no land base at all, village and cottage industries hold great promise. A detailed survey made by the Planning Commission has shown that in most of the district a few of the village industries, generally two or three, get a dominant place giving employment opportunities to a large number of families. In addition to those which are already popular in the areas, there may be a few others with potentiality for development. Depending on the resources and the skills available in any particular block, any of these industries could be taken up for intensive development. This may require the organisation of training programmes and utilization of all available opportunities for training. Unfortunately, even the existing facilities for training are not being utilised to full capacity. The District Industries Centres which will cover all the districts of the country in a couple of years time are expected to play a vital role in this field.

New Programme

If the new programme of Integrated Rural Development is to be something different from the multitude of programmes of the past that have 'tried and failed' to tackle the problem of unemployment in the past, a lot of concerted action is called for from various agencies. While we talk about the high percentage of persons, living below the poverty line in vague we do not have a clear concept of the actual size of the problem. Only a detailed survey can give us that idea. Since plans have to be related to local and other resources available these will have to be acertained with some degree of accuracy. At the same time we cannot afford to wait for a perfect compilation through sophisticated techniques. A balance will have to be kept between sophisticated techniques and rough and ready methods. As Prof. Raj Krishna pointed out (1973)—

> "A society which has failed to reduce the unemployment problem in two decades of development cannot ask its unemployed to wait indefinitely for the utterly uncertain prospect of employment growth catching up with population growth or income growth."

The success of the programme primarily depends upon how we can gear up the local administration to take up this challenging task.

Opportunity is Everywhere

SHRI ARUJUN SINGH, a rural youth got his employment in a bakery in Ahmedabad. Though he was paid reasonable wages, he could not continue owing to his ill-health and returned to his village. Jocularly when he was narrating his trade experience, his father Gopal Singh and others suggested him to start a Bakery unit in his village.

The local branch of Bank of Rajasthan gave a loan of Rs. 500 when the Singhs approached for small entrepreneur's enterprise. That financial assistance in addition to their guidance gave them hope and encouragement in the new venture.

The energetic young son and experienced father enthusiastically planned their effort with minute details. Their attempt yielded good results. Their bakery products earned good name for its taste in the nearby smaller town, Binder and the surrounding villages. They were able to earn Rs. 700 every month.

The continuous income for their strenous labour gave them sufficient hope in life. They have repaid one-third of their loan to the bank and hopeful of complete repayment. About 25 K.G. of backery products, they sell every day.

It is trute that opportunity is everywhere.

-F.P.O. Udaipur

Training For Full Employment In Rural Areas



M. K. Kaw,
Joint Commissioner (Training)
Department of Rural Development, Min. of Agriculture and Irrigation

Employment for all in rural areas will remain in a dreamer's chimera unless the existing training programmes for the farmers, craftsmen and eutrepreneurs are adapted to their needs in rural areas. The author has chosen the correct time to have a fresh and searching look at the existing training facilities. He points out in precise terms their inadequacies, offers a blue print and underlines the supreme necessity for organising a massive training programme to achieve the goal of full employment within the stipulated time

THE NATIONAL economy of India depends primarily on agriculture and allied activities. The income of about 75 percent of its working population is derived from rural economic activities Approximately an equal percentage of the total rural population is illiterate. This situation clearly points to two inherent problems. The first relates to the widening gap between the results obtained by agricultural scientists and the application of the new technology in farmers' fields. This calls for a monumental effort at training of farmers The second pertains to the need for providing non-agricultural gainful occupations for the remaining rural population, and again underlines the importance that should be attached to training.

Strategy of Growth

The imperative laid down in the medium-term plan is an increase in productivity through a strategy of growth for social justice and provision of full employment within a period of ten years. A natonal policy has been formulated to initiate and foster an integrated rural development programme. This calls for intensive development of on-going programmes, as well as the initiation of micro-planning at the block level. The general strategy is to integrate the area and beneficiary approaches to development by conducting resource and skill surveys, assessing the needs and potential of each target household and implementing productive schemes that are tailored to its specific requirements. In this manner, the target households would be raised above the poverty line and full employment achieved throughout the country by 1988.

The fulfilment of these objectives is contingent upon the ability of the rural people to benefit from and participate in development programmes. Consequently, all governmental and other organisations have shown awareness of the need for education and training of the particular target groups which they are catering to. Such rural training programmes are usually designed and carried out as part of projects or activities geared to the establishment of economic activities.

Brief review of Rural Training set-up

The broad categories of the target groups in the rural areas are farmers, craftsmen and entrepreneurs. A review of the training facilities as available at present can be quite meaningful, if made separately for each category.

Farmers the general objective is to train the farmers in modern technology pertaining to all possible on-farm activities like agriculture, horticulture, animal husbandry, fisheries, farm forestry, sericulture, irrigation, organisation of cooperatives, obtaining credit from commercial banks, minor repair of farm equipment, etc It is difficult in this context to distinguish train-

ing from extension. In fact, several centres which started as extension workers' training institutions have also taken up farmers' training programmes.

The Department of Agriculture of the Central Government supervises the functioning of 83 Gramsevak Training Centres, 25 Gram Sevika Training Centres, 30 Workshop Wings and 150 Farmers' Training Centres spread throughout the country. It proposes to set up additionally 17 Composite Training Centres, 25 Gram Sevika Training Centres, 70 Workshop Wings and 150 Farmers' Training Centres.

The Indian Council of Agricultural Research has set up 17 Krishi Vigyan Kendras already and several more are on the way. There are 15 Panchayati Raj Training Centres run by the State Governments, which impart training to village leaders. Agricultural Universities have started extension wings and several of them are trying to reach out to the farmers located around their campuses. There are training courses run in animal farms, seed and demonstration farms, poultry farms, orchards, fisheries and sericulture stations etc., by the concerned State Government departments. A large number of short duration camps are held at district, block and lower levels, either through the respective departments or through the BDOs.

The most usual mode of training is, however, still through the village level workers. The effectiveness of training given at first hand in farmers' fields cannot be exaggerated It is the recognition of this impact which has led to a further refinement in the shape of the Training and Visit system of extension. Such States as have opted for it are bifurcating the cadre of VLWs and retaining them for specialisation in agriculture and allied pursuits. In other States, VLWs continue as multi-purpose functionaries, but are expected to devote 80 per cent of their time to agriculture and related activities On the whole, there is a gradual shift away from the earlier emphasis on input supplies towards extension as a communication system which transmits message

Craftmen.—For this group, the emphasis has to be on imparting of new skills and upgradation of existing ones. The aim is to provide subsidiary occupations during the lean seasons as also to create a cadre of self-employed artisans, weavers, craftsmen, mechanics, operators, etc.

The most significant programme for this category is the Rural Artisans Programme, handled by the Development Commissioner (Small Scale Industries). Besides a stipend for training, it also provides a free set of tools and various subsidies on machinery and equipment. The training arranged on the spot if the period is very short; in other cases, it is conducted in the Industrial Training Institutes etc. In-plant training is also provided for specialised jobs.

The Industrial Training Institutes run by the State Governments under the overall guidance of the Director General of Employment and Training are the major centres for training of skilled operators. The training is in standardised occupations, requires minimum educational qualifications and is mainly oriented to meet the skill requirements of urban industrial units.

There are specialised training programmes run by the Development Commissioner (Handlooms) and the State Handloom Corporations; the All India Handicrafts Board and the State Handicrafts Boards and Corporations; Khadi and Village Industries Commission and the State Khadi Boards; Workshop Win Gram Sevak Training Centres and Panchayat Sai training centres on bakery, agricultural machinery run by the Central Departments of Food and Agr ture, and so on. In many cases, training is part project aimed at serving the needs of a cluster of w ers or handicraftsmen.

Rural entrepreneurs.—The last category compr of persons, especially the educated youth, who can up industrial and commercial ventures of their own small and tiny sectors. For this group, the skill bas training is mainly conducted by the Industrial Trai ing Institutes. Entrepreneurial Development Prc rammes are run by State Departments of Industric Small Industries Service Institutes under the Centr Government and some nationalised banks.

Critical Review

The present training facilities suffer from severa inadequacies, some of which have been outlined in the succeeding paragraphs. Like many other developing countries, most of our efforts are directed to developing a network of training centres which are oriented to meet the skill requirements of urban industrial centres. This urban bias is more apparent in respect of the vocational training programmes. There is a belief that the skill requirements of the rural sector can also be met by such training institutions, although little provision has yet been made to adopt the training programmes to the needs of rural people. The majority of the rural workers cannot even fulfil the basic admission pre-requisites such as a level of formal education and age. Many of these institutions are located in urban areas and only a few can be considered to be within the reach of the rural people.

In many of the training programmes, the training is designed to assist workers to meet occupational standards. However, in most cases rural skill requirements because of their diversity and levels of complexity do not conform to the standardised occupational training programmes offered by vocational training centres. With the increasing mechanization of agricultural operations and of rural life in general, there is a growing demand for mechanics, who can look after the repair and maintenance of various types of machinery and equipment. Such mechanics can cater to an area, which is enough to be accessible to the villagers but is also large enough to generate sufficient work. This type of mechanic can become viable only if he is trained to do a wide variety of jobs at the required level of sophistication. The above considerations demand that rural training programmes should aim at multiple skill development.

In any programme of development, two alternative strategies are those of target groups and target areas. In the field of rural developmnt, some sort of integration of these two approaches is being achieved under the Integrated Rural Development Programme. However, the training programmes are still largely target-group oriented and do not have an area basis. Now that the district and block have been almost unanimously accepted as the logical and inevitable units of decentralised planning and implementation, it is high time that the training infrastructure also conforms somewhat to the area approach. This would require a systematisation of the training system at the district and block levels.

This brings us to the next point The present situation is that of a plethora of training agencies run by different government, semi-government and volutary



The Committee appointed to go into the working of ITIs have come to the conclusion that ITIs training only very partly meets the vast need of rural artisan training.

organisations. There has not been any well thought out attempt at integrating and synthesising the various training programmes in order to build a national training system. The correct time has come to take a fresh look at the existing training facilities, so as to build a cohesive national infrastructure for rural manpower development.

In this context, the need for an effective manpower budgeting and planning system, also become obvious. The present situation has an inherent disadvantage in its in-capacity to match supplies of various types of trained manpower with the corresponding demands. This lacuna can be remedied only if manpower planning at district and block levels is initiated.

The last defect to which attention may be drawn is the absence of public participation. Training institutions are mainly officially run and do not even pay lip service to the concept of popular participation through constitution of Advisory Committees. The facilities are too thinly spread and do not really cover more than a very small percentage of the rural population There is also no attempt at creating a suitable infrastructure based on voluntary/public participation at the village level, which could be used for transmitting skills acquired by some of the people to the larger masses.

Emerging Trends

The above analysis may seem to be a little too critical It is not as though the various agencies responsible for training programmes are not engaged in concurrent evaluation of their present efforts. In this section attention is being drawn to some of these efforts with which the author is familiar. It is quite possible that he has not mentioned some of the steps being taken and he would be grateful if information is supplied to him by the readers.

The Ministry of Labour and Employment, Government of India had appointed a Committee under the Chairmanship of Shri Abdul Quadir to go into the working of industrial training institutes. One of the terms of reference related to the manner in which ITIs can serve the rural population. The Committee have come to the conclusion that ITI training only very partly meets the vast need of rural artisan training. The Committee have felt that rural vocational training delivered at the grass root level is at present not coordinated and is left to the initiative of individual governmental and non-governmental agencies. The need for establishment of a national training infrastructure designed to foster the development of a net-work of appropriate training facilities and economic and technical supporting services is apparent. This will have to be done after a proper study to ascertain the feasibility of adopting existing ITIs and/or designing new ITIs for meeting the training requirement of rural people and becoming part of the rural training network The Committee have further recommended that the modular concept of training can become a useful guideline for framing a rural artisan training programme Basic and broad-based modules should

be formulated for rural craftsmen training. Training modules for the large population of marginal farmers and landless labourers should include training programmes to make them employable for non-farm activities or for making them capable of self-employment for the remaining period of the year. Advanced modules should be developed for improving the skills of existing craftsmen, artisans and educated unemployed, so as to increase their employability and to help them to become entrepreneurs. Training programmes should also be organised through mobile training units.

The International Labour Office has given a proposal to the Ministry of Labour and Employment for the development of a national training system for rural gainful activities. The immediate objectives of the project are—(i) to assist in establishing national policy on ways and means as well as operational systems for the development of a national net-work of facilities and technical services for the delivery of training for rural gainful activities at grass root levels; and (ii) to reinforce the programming, planning and delivery processes of training for rural gainful activities in the four States of Assam, Bihar, Kerala and Orissa.

The Ministry of Industrial Development has been running the rural artisans programme for some years now. The findings of an evaluation exercise reveal that although this scheme has been a success where the officers are dedicated and painstaking, the causes of unsatisfactory progress in some cases have been lack of coordination between the training institutions like Industrial Training Institutes and project staff and lack of adequate training facilities. Since the rural artisans development programme does not either organize or conduct training programmes, it has to depend on other agencies for the proper design and implementation of the training component. This limitation appears to be the most critical handicap of the project. The Office of the Development Commissioner (Small Scale Industries) is continuously conducting programme review exercises with a view to introducing appropriate corrective measures. It seems that the programme could be improved by ascertaining the impact of its three components, training, stipends and subsidies independently as well as their inter-dependency in promoting income generating activities for non-farm workers.

Role of D I C

Simultaneously, the Ministry of Industrial Development has also started an ambitious programme for setting up district industries centres throughout the country. These will be institutions at the district level, which will provide all the services and facilities to the entrepreneurs at one place for setting up small and village industries. One of the 7 functional managers is to deal with research, extension and training. He has to arrange for training courses for entrepreneurs of small and tiny units and liaise with small Industries Service Institutes and other institutions. He has also to organise training under the Rural Artisans Programme. The exact modality of conducting the training courses has not however been amplified in great detail.

The Department of Agriculture of the Central Government is actively considering the setting up of Composite Agricultural Extension Training Centres with the assistance of the World Bank. These centres will be built around the existing Gram Sevak Training Centres and Farmers' Training Centres etc and will not be confined to service and training of VLWs. They will also cater to the requirements of farmers, women, rural youth, village leaders and other field functionaries of development departments. They will be utilised for training rural youth in skill-ori professions for generating self-employment for t Moreover, these centres will be brought under field of one command, so that they function as c posite Training Centres at one campus rather than independent and separate units. These existing insti tions, in order to play their new role, would need be revitalised and suitably strengthened with physi facilities such as agricultural farms dairy and poul farms, orchards, soil and seed testing laboratories, b gas plants etc. These centres will be equipped f customers hire service and also serve as pivotal in titutions for transfer of technology to the farmers.

The Planning Commission have been giving sui able thought to the need for strengthening of th planning machinery at the district level. The Dant wala Committee Report has suggested a team of officer who would form the planning cell at the district level This cell is, among other things, also to look after the manpower budgeting aspects. Another Committee under the Chairmanship of the Secretary (Planning Commission) is finalising the operational guidelines for block level planning. In these guidelines also, the need for manpower budgeting at the block level has been suitably emphasised.

The Planning Commission had asked the Indian Institute of Management to submit a report about the organisation of industrial training. In this report, the IIM has stated that an apprenticeship and craftsmanship programme should be planned at the level of a district or an area consisting of a set of neighbouring districts. The training programmes in ITIs and apprenticeship programmes should not necessarily relate to industrial activities alone. They should relate to the needs of the various developmental activities taking place in that district. They may relate to agro-based activities, irrigation, small, medium and cottage industries etc. In addition, ITIs should also provide training in entrepreneurial activities like maintenance and service jobs such as setting up small workshops etc. They have further suggested that manpower needs should form an integral part of the district plan. They have considered it essential that a close linkage be developed between the government and various training agencies in relation to planning, administration and implementation of apprenticeship act. Further, they have suggested that training and employment boards be constituted at district and State levels. These will help in identifying the training needs by involving various developmental and other agencies. They have also recommended that as the ITIs would be involved in various training programmes at the district level, their name should be changed to Institute of Craftsmen Training or Centre for Craftsmen Training. This Institute should become the centre for continuous training for various types of craftsmen at the district level.

The Department of Rural Development, Government of India have set up a Committee on Training for Full Employment in rural areas. This Committee has already identified 8 general purpose trades, namely, auto-mechanic, tractor and farm equipment mechanic, rural electrician, carpentary and furniture making, blacksmithy, sheet-metal and welding, bakery, sewing, knitting and embroidery and leather goods manufac-

Special short-term courses for these trades requiring multiple skills have been designed along with the syllabi therefor. These 8 trades have already been recommended to the concerned Ministries, so that attempts could be made to start a massive training programme either through existing institutions or through new institutions, if necessary. The entrance qualifications for these trades have been lowered and a stipend of Rs. 150 per month is being recommended. The courses will not end in the award of certificates, so that the trainees do not hanker about jobs. The training will lay considerable emphasis on practical aspects, especially by use of instructional modules. The Committee also felt that management inputs should be built in by integrating the elements of entrepreneurial development courses in the syllabi itself. Other inputs like project formulation, site selection, market survey, margin money, credit etc. have also to be tied up before the end of the training course, so that the trainee is fully equiped to set up his own business when he leaves the institution. The Committee has also recommended that training courses should be designed according to the requirement of each area. For this purpose, it would be necessary to survey the emerging manpower needs in each block and this could be a significant part of the exercise of block-level planning currently being undertaken in 300 blocks under the scheme "Area Planning for Full Employment."

Under the Integrated Rural Development Programme, the full cost of training of beneficiaries can be met from the IRD funds provided the training courses are conducted in selected institutions like gram sevaks training centres, farmers' training centres, Krishi Vigyan Kendras, and agricultural universities. The department is trying to expand the above provision so as to make expenditure on all types of training a proper charge on the IRD funds.

Blue Print for a New Training Policy

Surely there is a growing awareness about the defects in the present training structure as also about the need for a national training policy Some brief thoughts about a possible blue-print or action are given in the succeeding paragraphs :

At the national level, there should be a clear policy on training for full employment in rural areas. This can be achieved through the Committee on Training for Full Employment, which has already been constituted by the Department of Rural Development. This Committee is already seized of the problem. It has started taking stock of all existing training institutions in order to rationalise the structure by reducing their number and clubbing the training in related disciplines at one place The Committee would also be examining the training syllabi, courses, methods etc. and all existing state and district level institutions in order to re-orient them towards the achievement of the plan objectives, especially with reference to the target groups in the rural areas. It is felt that the Committee should be a permanent one and should continuously monitor and take stock of the training situation in the country. Similarly, there would be need for permanent coordination committees in each State and at district levels also.

In order to impart the area concept into the training infrastructure, the rural training programme should be designed on the basis of district and block manpower plans. The district and the block should be clearly acknowledged as the units of manpower planning and budgeting. Such planning should be done through the district planning cell, which will have a manpower expert. This expert should be responsible for conducting all surveys and collection of information about the requirements of different types of manpower and for management of training institutions in order to meet the demand.

At the district level, three institutions can be conceived of, as follows :

(i) District Composite Agricultural Training Centre: This will mainly serve the farmers. It should be built around an existing institutions like a Gram Sevak Training Centre, a Gram Sevika Training Centre, a Krishi Vigyan Kendra, a Farmers' Training Centre and the like. It would perhaps be possible to cover the entire country merely by conversion of these existing centres into composite agricultural training centres. Instead of all of them expending in different directions, the attempt should be to strengthen one of them and make it a viable institution. Such a centre should train farmers, farm women, rural youth, panchayat leaders and other field functionaries of development programmes These should have workshop wings in order to impart the rudimentary knowledge to farmers about repair of farm equipment etc. However, they should not be used for training youth in skill-oriented professions for generating self-employment for them, as this would lend to dissipate their energies. In short, the type of composite agricultural extension training centre visualised in the World Bank Project of the Directorate of Extension would seem to be the model for the district centres.

(ii) **District Rural Crafts Centre :** This will serve the artisans, weavers, craftsmen, general purpose mechanics etc. All training programmes in the field of rural artisans, handlooms, khadi and village industries and those trades of the ITI, which relate to general purpose mechanics, should be brought under a common roof. These centres should have the basic core faculty, which would be uniform throughout the country. However, for selected areas, there would have to be emphasis on particular types of crafts and trades depending on existing skills and the potential of the area Various All India and State level agencies should instead of wasting their energies and creating new infrastructure try to strengthen such district crafts centres by financing additional accommodation equipment, cost of new facilities etc.

(iii) **District Entrepreneurial Development Centre :** This will cater to the rural industrialists and other entrepreneurs. This centre should be built around the existing ITIs by reorienting their syllabus and curriculum in order to train people both in skills and entrepreneurship. All programmes of entrepreneurial development should be merged into the syllabi of the ITIs It is only in this manner that the ITIs can be truely ruralized. This would also provide the district industries centres, which have at present no training wing under them, with a well-equipped training base.

Similarly, at the level of the block, an attempt should be made to create one comprehensive training centre, which will integrate all training programmes under one roof. This can also be built around an existing centre, if available

Finally, at the level of the village, the gram panchayats would have to be activated. There would

18 DPD/78—4

have to be a small training committee in the panchayat itself, which would also co-opt the local school teacher, the gram sevak and leaders of mahila mandals, yuvak mandals etc. These Committees should be charged with the responsibility of organising spare time classes in the evening. The village chaupal or the panchayat ghar or a primary school building or even a place of worship could be chosen as the venue of the training

The programme of Adult Education, the community listening scheme, and other extension programmes could be integrated into these classes. The VLWs working under the T & V system could also use this devise to transmit their messages regarding agricultural technology Last and most important, the skills acquired by panchayat mahila mandal and yuvak mandal, leaders and farmers, craftsmen etc., who have received institutional training, could be passed on to the rural masses. It is only by such an energisation of the gram panchayat that a massive training programme can be launched in the rural areas.

The emphasis in all training programmes should be on development of multiple skills, basic management and techniques training, through formulation of modules and mobile training by peripatetic teams

---

A Committee on training for Full Employment in Rural areas identified auto-mechanic, tractor and farm equipment mechanic, rural electrician, carpentary and furniture making, blacksmithy, sheet-metal welding, bakery, sewing, knitting and embroidery and leather goods manufacturing, as General Purpose trades. The training for these eight trades will be given either through existing institutions or new institutions.

There should be a continuous monitoring and evaluation of the rural training programme This can be done through the National Institute of Rural Development, Hyderabad, the State Institutes of Rural Development, Agricultural Universities and other bodies The NIRD has already been requested to bring out a Directory of Rural Training Institutions in India and work on this project has started

Thus the achievement of full employment in rural areas is contingent upon the evolution of a national training policy, the creation of a national training infrastructure, the formulation of suitable coordinative mechanisms at all levels, the acceptance of manpower planning and budgeting as the basis for training programmes, the development of multiple skill courses, the acceptance of an area planning approach for training institutions at district and block levels and the participation of the people through their own organisations, especially at the cutting edge level. Unless, a massive training programme is organised to support the ambitious rural development programme, the goal of full employment may not be achieved within the stipulated time.



Role of Banks in Providing Employment

D. C. Gupta
Executive Director, Punjab National Bank

Banks have great potentialities for creating more employment which is one of the central objectives of our development plans. In the course of 1978-82 the banks are likely to employ about 2,30,000 persons direct and create additional employment for about 15 millions through their lending operations In the opinion of the author more than half the labour force emerging during this period will be helped by the banking system to secure gainful employment

SINCE NATIONALISATION public sector banks in India have been following a policy which is consistently in conformity with the national objectives and priorities They have given a good account of themselves in carrying banking to unbanked areas during the preceding nine years. Similarly, in the area of priority credit, they are endeavouring to achieve the goal of 33.33 per cent by the end of March 1979. A perusal of the draft Five Year Plan 1978-83 reveals two features which may set the tone for future development of banking. These are the strategy of integrated rural development and the emphasis placed on increasing the share of credit from the public credit system to small farmers and small and tiny industrial enterprises

The Problem

One of the central objectives of our development plans is to create more employment. According to the estimates of Planning Commission, the labour force in 1978 is expected to be 265 3 million. Of this the number of chronic unemployed persons in 1978 are likely to be 4 4 million and the workforce 260.9 million. Planning Commission projections show that the labour force is likely to increase to 294.8 million in

1983. This means that 29.5 million persons will enter the labour force in the next five years, and the annual addition to the labour force will escalate to 6 million a year against 4 million a year during the decade 1961-71 and 5 million a year during the last seven years. As the central goal of the present Government is to provide employment to every able person within a dacade from the date it took over the reins of office, it is therefore natural to give special emphasis to labour-intensive techniques in all the spheres of economic activities.

Bank's Role

Banks generate two types of employment. These are :

—Employment within the system

—Employment outside the system through lending operations.

Employment Within

At present the total manpower employed by the banks is around 5 lakhs According to a perspective 5-year plan prepared by the National Institute of Bank Management (NIBM), the growth of banking industry between the period 1978-82 is likely to be as follows :—

Although cent per cent accurate estimate of emplo ment created per Rs. 1 crore of investment in differe sectors is not possible; an estimate can, however, l made about it. It is believed that employment create per one crore of rupees investment in road buildi will be around 6,000, agriculture 3,000, large ar medium industries 500, small and tiny industries 1,50 cottage industries 5,000, etc. On the basis of these in vestment, labour ratios, banks would be creating add tional employment to the extent of 18.3 millions durin the period 1978 to 1982 as per table on page 31.

Sector-wise Employment

The sector-wise estimate is likely to be on the highe side due to the simple fact that items 4 and 6 are likel to be existing units where employment expansion may not be with the same rate as assumed above. To thi extent the above figures should be revised downwar considerably as these two account for two-third of the incremental credit during 1978-82. However, even if we discount the estimate by 20 per cent, banks are still likely to create around 14.74 million jobs through their lending operations during the period 1978-82.

		By December 1982	Increase between Jan. 1978 to Dec. 1982
1. Deposits (Rs crores)'		50,000	29,000
2. Credit (Rs. crores)		30,000	16,500
3. Branches (Nos)		45,000	19,000
4. Manpower (Nos)		7,00,000	2,30,000
—Officers	1,49,000		(55, 000)
—Clerks	3,73,000		(1,15,000)
—Sub-staff	1,78,000		(60,000)

It is thus clear that all the commercial banks in India would be generating additional direct employment of the order of 2,30,000 comprising 55,000 officers, 1,15,000 clerks and 60,000 sub-staff between the five year period January 1978 to December 1982

Employment Outside

In addition to the first type of employment discussed above, banks generate employment both directly and indirectly by their lending operations According to one of the NIBM studies the occupation-wise growth pattern of bank credit is likely to be as follows during the period 1978-82.

Besides creating direct employment through lending operations, banks are also instrumental in creating indirect employment via their newly set-up borrowed units. Whenever a new unit is set up with the help of bank finance, the newly born unit induces growth of numerous input-producing and out-put-consuming types of industrial activities. However, the magnitude of employment generation of this type can not be easily worked out.

From above it is clear that out of 29.5 million persons entering the labour force during the period 1978

(Rs. in crores)

Sector	Credit outstanding by Dec. 1982	Additional credit Jan. 1978-Dec. 1982
Agriculture	3,800	2,300
S.S.I.	4,000	2,500
Transport Operators	500	300
Export	2,400	1,500
Other priorities	800	400
Traditional Credit	18,500	9,500
TOTAL	30,000	16,500

Sector-wise employment Generation through Bank Credit during 1978-82

Sr. No.	Sector	Incremental Credit (Rs. in crore)	Employment per Rs. one crore (investment (No.)	Additional Employment (Rs. in lakhs)
1.	Agriculture	2,300	3000	69.0
2.	SSI & Tiny Industries	2500	1500	37.5
3.	Transport Operators	300	500	1.5
4.	Exports	1500	500	7.5
5.	Other priorities	400	5000	20.0
6.	Traditional Credit	9500	500	47.5
		16500		183 0

to 1982 more than 15 million are likely to get employment within the banking system or with the help of the system. Government has fully realised the potentialities of bank credit as an instrument of creating employment in the society in general and rural areas in particular. Besides this, banks are taking special care to provide employment to the weakest of the weak through their various schemes such as half-a-million job programme, District Industries Centre's approach, small farmers and marginal farmers, lending under more emphasis on tiny sectors and small businesses, Small Farmers and marginal Farmers lending under DRI, etc.

Of late, one more goal fixed by the Government is to provide credit to atleast two entrepreneurs, for a branch every month on an ongoing basis. This will come to roughly 6,72,000 per year on the basis of existing 28,000 branches. By the end of 1982 when bank branches would become 50,000, this figure alone will touch a staggering level of about 1 2 million per annum.

Full Employment and Disguised Unemployment

A Conceptual Analysis

ASOKE KUMAR CHAUDHURI
Deputy Director
Department of Commerce



IN THE LITERATURE before the Great Depression, unemployment was usually regarded as a temporary maladjustment of demand and supply of labour. It was explained in terms of cyclical or other shifts in demand, low mobility of labour and sluggish price and wage adjustment. The Great Depression and Keynesian economics, born of the depression experience, made the world employment-conscious. Under-employment equilibrium is now regarded as the rule and full employment a rare exception.

Keynesian concept of involuntary unemployment

The concept of involuntary unemployment is the core of Keynesian economics of full employment. According to Keynes, "men are involuntarily unemployed if, in the event of a small rise in the price of wage goods relatively to the money wage, both the aggregate supply of labour willing to work for the current money wage and the aggregate demand for it at that wage would be greater than the existing volume of employment" In a state of involuntary unemployment, therefore, the utility of wage exceeds the marginal disutility of labour. In other words, in a state of full employment, the marginal unit of labour gets a wage in real terms, the utility derived from which is equal to the disutility that the work involves. Full employment in Keynesian parlance, therefore, signifies

a state in which any person *willing* to work at a wage rate that corresponds to his economic contribution to the product of the industry, finds a job at that wage.

The Keynesian analysis is based on "short period" during which, among other things, capital equipment and technique are given and constant, these being the product of past investment. Labour is employed upon a given capital equipment, and is pushed up to the 'margin of profitableness'. A short period equilibrium is thus envisaged for the economy. Keynes's 'general' theory of employment lacks generality in the sense that it does not take into account that type of unemployment which exists for lack of real capital even when fully utilized, that is, even when effective demand is adequate to justify full utilization of the existing capital stock. It is against this Keynesian background that Harrod draws attention to the long-run importance of productivity in considering employment stabilization. "To secure full employment in the short-run without regard to what may be necessary for securing a steady rate of progress is short-sighted " The short-run presence of Keynesian unemployment alongside long-run non-Keynesian unemployment considerably complicates an under-developed economy's full employment policy, since the short-run measures to meet the former are not necessarily consonant with the long-run measures to meet the latter.

The essence of development planning consists in ensuring a volume of productive investment which is sufficient to generate a sustained increase in national income, substantially in excess of the growth in population, so that per capita national income rises. The strategic variable is the quantum and direction of productive investment. Consequently, the problem of development planning is to mobilize resources for productive investment and to allocate them to the various sectors in such a manner as to attain a rapid rate of growth of the productive power of the national economy. In other words, the basic objective of development planning is the optimum organization of resources for growth The fundamental problem is how to achieve an increase in national production fast enough to enable the labour force to be kept in employment and also to facilitate rise in *per capita* income

Disguised unemployment and saving potential

The employment scene in an over-populated under-developed country is, to a large extent, characterized by the problem of 'disguised unemployment'. Originally, the concept of disguised unemployment was conceived by Joan Robinson as an extension of the Keynesian concept of involuntary unemployment. According to Mrs. Robinson, "a decline in demand for the product of the general run of industries leads to a diversification of labour from occupations in which productivity is higher to others where it is lower The cause of this diversion, a decline in effective demand, is exactly the same as the cause of unemployment in the ordinary sense, and it is natural to describe the adoption of inferior occupations by dismissed workers as disguised unemployment." In the context of an under-developed economy, however, the concept of disguised unemplyment takes on a distinct connotation. The concept is explained not in terms of a decline in effective demand but in terms of paucity of capital relative to the current size of population In the rural sector, there is surplus labour pressing on a limited stock of land. Since the mode of produc is family-oriented and pre-capitalistic, the labo enjoys a living which is set by average producti even though the marginal productivity may be z There is not enough outlet for this surplus in the ur sector where shortage of capital is already depres the real wage rate down to the subsistance level.

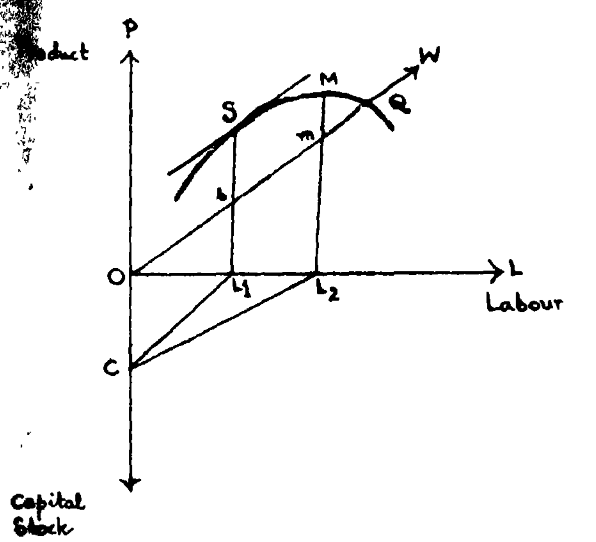
In the U.N. report entitled *Measures for the E nomic Development of Under-Developed Countr* the disguised unemployed have been defined as "th persons who work on their own account and who are numerous, relatively to the resources with which t work that if a number of them were withdrawn work in other sectors of the economy, the total out of the sector from which they were withdrawn would be diminshed even though no significant reorganizat occurred in this sector, and no significant substitut of capital". According to Ragner Nurkse, the de loping countires "suffer from large-scale disguised u employment in the sense that, even with unchang techniques of agriculture, a large part of the popu tion engaged in agriculture could be removed with reducing agricultural output. That is the definition the concept of disguised unemployment as applied the situation with which we are concerned. The sa farm output could be got with a smaller labc force." Disguised unemployment may, therefore, defined as the part of the labour force which can released from certain sectors of an economy withc changing the capital-intensity and institutional frar work but by shifting some labourers to other produ tive work so that the remaining labourers may fi full-time work (at least during that part of the ye when season allows them to work), and further by in proving the orgnization of work and division of labou and also by introducing simple labour saving devic requiring little or no net addition to capital outlay.

Employment Absorption Criterion and Choice of Techniques

The 'employment absorption criterion' for choice c techniques in a developing economy stems partly fro the concept of disguised unemployment. This criterio advocates adoption of labour-intensive technique which require large quantity of labour in combinatio with a given unit of capital, i.e., low capital-labou ratio. This theory is based on the recognition of th fundamental fact that the over-populated under developed countries are characterized by massive un employment and under-employment, coupled wit acute paucity of capital. Under such an economic situa tion, it is agrued, the policy objective should be t substitute abundant labour for scarce capital, or, in other words, mobilize the maximum amount of labour per unit of capital investment.

The obvious advantage of the more labour-intensive techniques is that, for a given amount of capital investment, they immediately create a large volume of employment. Since the bulk of the wage income is spent on consumption, this facilitates a higher level of present consumption. Also, since a larger volume of employment means that the available income is spread over a larger number of people, labour-intensive techniques ensure a higher degree of economic equality.

Such techniques, however, do not ensure maximization of the surplus rate. The following diagram illustrates this position.



It is assumed that the capital stock is given, viz., OC. OW is the total wage curve with a constant wage rate given by ∠WOL. Q is the total product curve. There are two techniques of production—one capital-intensive and the other labour-intensive, represented by ∠CL_1O and ∠CL_2O respectively It will be seen that the capital-intensive technique generates the maximum surplus, i.e., Ss; the labour-intensive technique results in a smaller margin of surplus, i.e. Mm.

The maximum labour absorption criterion does not necessarily result in maximization of the addition to total output. This is because labour costs in the labour-intensive methods are relatively high, which result in a comparatively low net surplus per unit of capital, after the labour costs are deducted. Again, adoption of capital-saving and labour-intensive devices may result in perpetuation of low labour productivity Techniques used in labour-intensive plants often produce less attractive results in terms of quality of the end products. The disastrous consequences of the Chinese campaign to manufacture quality pig iron in incredibly small and scattered smelting furnaces—"blast-furnaces in back-yard"—constitute a typical example in this context.

Social Cost of Labour and Shadow Prices

Assuming that the disguised unemployed can be transferred to 'investment' projects requiring no special skill or equipment, such projects of a labour-intensive nature can hardly be expected to turn out fixed capital in quantities and qualities that are of immediate and adequate use to industrialization. The most that could be expected of such labour-intensive projects is a limited amount of preliminary capital formation, e.g. road building for highways, handicrafts serving as raw material for machine-made manufactures, etc. But it ... 'machine to make machines' on a scale large enough to boost up industrialization. Disguised unemployed may not be an effective substitute for such machines to make machines'.

...mployment of disguised unemployed is not a ...ess process. First, prior to their shift to the capital goods sector, the disguised unemployed are forced ...ch a low standard of consumption that they will ...st certainly develop new stronger consuming habits after the shift. Second, the urban areas, where capital goods industries are concentrated, are conducive to a strong propensity to consume than the rural areas from where the disguised unemployed come. Thus, when due account is taken of the 'habit effect' and the 'taste effect', the propensity to consume for the whole economy may well rise as a result of urbanizing the erstwhile unproductive but presently productive consumers—the disguised unemployed. Under such a situation, the pressure will increase for allocating to the consumer goods sector those resources which might otherwise be used to increase output of capital goods. Further, the marginal propensity to consume of the productive workers cannot be assumed to be zero. If the marginal propensity to consume is equal to unity, the enitre "concealed saving" will be eaten up when the unproductive dependants move over to the capital projects. If the marginal propensity to consume is less than unity, only a partial amount of the "concealed saving" will be recovered.

The conclusion that emerges is that the social cost (shadow wage rate) of employment of unskilled labour in an over-populated under-developed economy like India will be surely less than the market rate of wages; but it would be incorrect to equate it to zero just because there is large-scale unemployment. Thus, the actual shadow price should be somewhere between the ceiling (the market wage rate) and the floor (the zero social cost) Such a wage policy, will have to be coupled with appropriate fiscal measures, i.e , a judicious mixture of taxes and subsidies. As regards different types of skilled labour, the U.N.'s Development Programming Techniques Series has advocated that a tentative estimate of shadow prices can be made on the basis of the cost of transferring workers from villages to industrial areas, providing them with housing and other facilities and training them.

The above considerations cast definite doubt on the usefulness of the hypothesis of disguised unemployment as a source of capital accumulation. Far from helping capital accumulation and economic development. disguised unemployment may, in an extreme situation, hinder them by giving 'aid and comfort' to uneconomic projects of an employment generating rather than a capacity-increasing nature

Conclusion

Notwithstanding its shortcomings, the concept of disguised unemployment projects the basic spectacle of an 'unlimited supply of labour' at current real wage rate, which is too low to permit a cut without impairing labour efficiency. The situation warrants an accelerated rate of investment towards capital formation. Contrary to Keynes's prescription, the additional investment has to be financed as far as possible, by additional savings. In the absence of an adequate flow of foreign capital and an adequate volume of public savings, deficit financing has to be resorted to Deficit financing, in so far as it is not adequately matched by increased output of wage goods, tends to raise the prices of wage goods. Under such a situation two alternatives are open to the economy First, the money wage rate may be kept constant. The real wage rate will then fall below the 'permissible' level. Alternatively, the real wage rate may be kept constant, allowing money wages to rise. This may generate an inflationary spiral In such an eventuality it is of paramount importance to have an effective system of controls □

PD/78—5

Employment Generation

Technology Choice and Social Motivation

Bepin Behari,
Jt. Director, Planning Commission



A RADICALLY new strategy is needed for the eradication of unemployment and improving the living conditions of the Indian people. Unless it is done, there could be catastrophic social disintegration, political upheaval, and deterioration in law and order situation. During the last thirty years, there has been continued increase in unutilised manpower. At one time, more than 40 million persons were estimated unemployed. With every quinquennial plan, the backlog of unemployment swelled larger.

Industrial and Human Concentration

Meanwhile the concentration of Industrial activities and the trend towards urbanisation were intensified. Available data for 1973-74 showed that 46.68 per cent of the total number of factories, 42.32 per cent of fixed capital, 53.68 per cent of employment and 57.29 per cent of the output were concentrated in four States, namely, Maharashtra, Gujarat, Tamil Nadu and West Bengal. Even within the industrially advanced States, the industrial activities were restricted to only a few districts. Districts of Calcutta, Howrah, 24-Parganas and Burdwan in West Bengal, Greater Bombay, Poona, Thana, Kolhapur and Sangli in Maharashtra ; Madras, Coimbatore, Tiruchirapalli and Madurai in Tamil Nadu ; Ernakulam in Kerala ; Ahmedabad in Gujarat ; ... in Uttar Pradesh and Ranchi, Hazaribagh and ...um in Bihar have relatively larger number ...ries than elsewhere in the State. Even in an ...ially backward State like Assam, Lakhimpur ...bsagar districts together accounted for 49.3 per ... the total number of factories and 63.2 per cent ...ory employment in the State.

...sures adopted for promotion of modern small ...dustries, handicrafts, handloom and such other ...s also did not succeed in diffusing the trend. ...tes, namely, Maharashtra, Tamil Nadu, West ..., Punjab, Uttar Pradesh and Gujarat taken to... contributed 69 per cent of the total output of ...dern small scale industry sector ; in these States ...59 per cent of the total units, are located

Concentration of certain activities in a few districts is noticeable even in small scale sector. Ninetytwo per cent of total woollen hosiery units are located in Ludhiana, 82 per cent of cotton hosiery in Tiruppur, Ludhiana, Calcutta and Delhi, 63 per cent of bicycle parts and accessories in Ludhiana, 52 per cent of nuts and bolts in Ludhiana, Jullundur, Howrah and Greater Bombay, 21 per cent of iron and steel casting and forging units are located in Jullundur, Ludhiana and Howrah. Such concentrations occur with regard to carpet weaving, brassware, gems and jewellery, handloom weaving and such other activities. As a result of such concentrations of industrial activities, both in the large and small scale sectors dispersed employment opportunities have not been adequately generated. Absorptive capacity of the agricultural sector has been very limited. Programmes like integrated rural development, Antyodaya and Sumangala development blocks have been initiated to tackle such problems Their achievements have yet to be evaluated. Whether they could adequately meet the challenge is also doubtful.

New Approach

Realising the importance of employment generation specially in order to reverse the trend of industrial and human concentrations, the Draft Plan 1978—83 laid considerable emphasis on a new approach. It highlighted the need for employment intensive projects. Acknowledging the urgency of providing full employment to the people, as announced by the New Government, the planners have now made the creation of abundant employment opportunities and the provision of basic minimum needs to the teeming millions as the main planks of the Draft Plan. Three other basic objectives of the Plan, namely, acceleration in the rate of growth in the economy, reduction in income disparities and continued drive towards self-reliance were intended to help the poor These five objectives are

programmed in such a way that they did not endanger price stability. But, these objectives, as indicated by Shri V. Rajadhyaksha, Member, Planing Commission, recently, are not mutually compatible in the sense that any one pushed to the limit would retard the attainment of others. In order to finely balance these objectives, it is necessary to go about them very carefully.

Unemployment Problem

The first step in this regard is to have clarity with regard to the nature and magnitude of the unemployment problem. The earlier concepts used for the measurement of unemployment level in the country has been found misleading. For this reason, the Draft Plan 1978—83 introduced some innovations in the treatment of available data. The most important innovation had been the measurement of the acuteness of the problem in terms of unemployed days, rather than unemployed persons, it also distinguished between 'chronic' and 'weekly' unemployment. Such an approach was needed to assess the magnitude of irregular unemployment, and chronic unemployment formed only a part of the Indian scene. In 1973, there were 10.1 million persons who did not find even an hour of work during the survey week and were seeking work, while in 1978, this number increased to 11.2 million. Statistical refinements of this kind are useful only for certain special purposes. The primary causes which were responsible for these persons not being able to obtain wage-employment are not disclosed by these data. These data indicated the number of persons who either could not find the job they were seeking, or they did not, voluntarily or otherwise, agree to avail of the opportunities that were available. By themselves these data would not be helpful in manpower planning or for creating avenues of work. Unless the socio-economic implications of the situation are clearly comprehended, effective planning in this regard could not be possible. The term unemployment as commonly understood in economic textbooks is not very relevant in the Indian context. As such, any assessment of such phenomena in a refined statistical manner should be given up as a tool for economic planning.

Conceptual Shortcomings

The shortcomings of prevalent concepts relating to employment and unemployment are well-known. International economists like Gunar Myrdal, P P Streeten and Frances Stewart have highlighted the difficulties inherent in such concepts. Mrs Stewart stated that "the application of the advanced country concept to the third world countries leads to strange conclusions; employment then accounts for only a minority of those of working age." As a result of such strange conclusions, which are aptly applicable to the teeming millions of India, she questioned whether those who are not included amongst the employed category could be counted as unemployed. Those who are realistically aware of the situation would agree with Mrs. Stewart that the total number of unemployed persons in India does not represent the actual persons who are available for different types of wage employment. For planning purposes, it is helpful to know the quantum of workers who are actually desirous of working at specified compensations.

The definitions of employment and une require to be realistically established in orc the government to provide for the affecte Unless it is forced labour, or the payment counted against welfare doles, employment balance between the availability of human po its fruitful absorption. Employment in this s to a situation where the persons seeking w tunities are able to produce those goods ar which are desired by some one, whether tha is an individual, a corporation, or the societ tal, and who is willing to compensate for t rendered. In this sense, employment is a social relationship comprising of an obligati part of the worker to perform some socially activities, and to compensate for the services on the part of the society. The prevalenc ployment or unemployment in any community the harmony or disharmony existing betwee sides. There could be many causes of the dis Available data on the Indian condition sug there is a lack of coordination between w the yield of the workers, and the marketabili output. **In a centrally directed economy, t harmony is established as a result of State and the individual having no free-will of th Where the individuals are required to consun is distributed to them while they are required at the post assigned to them the harmony is parent. Under such a situation there could b employment of the type occuring in free socie Indian unemployment scene is an outcome of dom accorded to the individuals and therefo primary cause of this phenomenon must be t the psychological attitude of the workers and ability to attune themselves to social require**

The Keynesian prescription of unemploymen

Anticipated Annual Earnings of certain catego Employment (Based on *1971* Census)

Category	Percentage of total population	Pe of An Ea
Agriculture and allied activities	23 72	
Mining and Quarrying	0 17	
Manufacturing	3 12	
Construction	0 40	
Trade and Commerce	1 83	
Transport, Storage and Communication	0 80	
Other services	2 88	
Total working population	*32 92 (—180 37 million pers*	
Total Population	*100 (—547 9 million pers*	

be effectively applied to a larger [illegible] unemployed persons in the country. The present distribution of the work-force and the anticipated earnings have created a psychological situation incapable of immediate solution. The country is primarily rural in character, which meant that 82.3 per cent of her labour force reside in rural areas; the concentration of labour-force accounting for about three-fourths of the total is highest in agricultural sector. The industrial establishments are heavily concentrated in a few regions, and they provide employment to less than one-tenth of the labour force but the total earnings there is very high, providing an urge to urban migration and a feeling of dissatisfaction with agriculture wage-labour. It could be seen from table on page 38 that agriculture and allied activities comprising about 72 per cent of the working population were expected to provide only Rs. 1224 per worker, whilst trade and commerce accounting for 5 6 per cent of employment of the working population were expected to yield an average annual income of Rs. 4173 per worker Within each group itself, considerable variations in annual earnings occur. For example, the average of the manufacturing sector is Rs. 2240, but in repair service, it could be Rs. 3852. In trade and commerce, as a broad group, the annual per capita earning could be Rs. 4173 but the wholesale trade yielded only Rs. 2371 and the retail trade Rs. 4837. As a result of such [illegible], there is an urge to move from the area of [illegible] anticipated earnings to the higher ones. The [illegible]ve capacity of higher wage/earnings categories [illegible] limited, a kind of chronic rigidity in the adjustment process occurs. Much of the unemployment in [illegible] is an expression of frustration in one's existing work availability and reluctance to accept what is commensurate with their productivity.

The recognition of unemployment as a human problem transcending precise statistical indicators makes it imperative to analyse the various motivational impetuses that induce a worker to offer his service at a given wage-rate, or to be in self-employment. There is a thin demarcation between self-employment and unemployment depending upon the remunerations earned. Even when unemployment data for general purpose are collected, it should be desirable to correlate the unwillingness or the inability to work with the anticipated earnings and other conditions of employment on the one hand, as well as with the level of productivity and the expected price of the output on the other. Effective solution of unemployment will require both psychological as well as economic measures. The fixation of statutory minimum wage-rate without specifying the productivity level of the worker may not be conducive to larger employment generation In case the prevailing wage-rate or the anticipated level of earning in the categories of employment in which the individual has the possibility of absorption is less than what he is obtaining otherwise, the worker would be most reluctant to seek such employment. Examples of this situation are not far to seek. Beggary, burglary, and [illegible]tism in many cases yielded greater return than wage-employment The problem unemployment [illegible]red that the various avenues of wage and self [illegible]oyment should become more attractive and the [illegible]eekers must be motivated to accept even the [illegible]lly available less remunerative positions This is [illegible] area of consideration in which sociological factors [illegible] more significant than the economic.

[illegible]

With regard to underemployment and [illegible] employment the problem is much more [illegible] than it appears at the face of it. Even in Indian conditions, the Draft Plan has acknowledged the seriousness of this problem both with regard to its magnitude and solution. Many of the national programmes of the country have been directed towards provision of fuller employment. The Khadi and Village Industries Commission, the All India Handicrafts Board, Integrated Rural Development Programme and several such other official and voluntary organisations have been concerned with meeting the challenge of underemployment. The measurement of unemployment in terms of man-days rather than in terms of persons unemployed in the Draft Plan has been done primarily to assess the intensity of this problem. But there is a deep-rooted conceptional difficulty in this regard. The international standard relating to the number of hours on the basis of which the fullness or otherwise of employment is assessed requires to be suitably modified. The duration of daily or weekly hours of work which could be considered "full" in factory establisments may not be suitable for all work programmes. For example, in agricultural activities as well as in self-employment, there could not be regular hours of work. There is bound to be seasonal fluctuations. The rhythm of agricultural activities, depending upon the cropping pattern, demanded varied hours of work. A self-emloyed doctor cannot stick to rigid hours of daily work either; or an advocate getting only one brief requiring his attention for a few hours during a week cannot be considered underemployed. In such cases, the problem of underemployment refers more to the earning capacity of the individual than to the hours of work, but as far as the level of earning is concerned, any standardisation in its regard would be more a task of social welfare rather than that of employment generation..

Disguised nature of unemployment as well as of employment highlights a new dimension of the problem. These cannot be put to statistical measurement, and as such, they always remain elusive In the event of a worker being on the pay-roll of an economic enterprise but making no positive contribution could be considered disguised eunemployed, but there are many occasions, specially under self-employment or under family enterprises, when many persons assisting the activities are not considered as employed. These are anomalies which have attracted the highest attention. When the absence of a worker from an activity deprives the enterprise of a contribution then only the worker when in employment could be considered contributing to it. But to assign any specific contribution to an individual is not always possible. Ragnar Nurkse, J.C.H. Fei and Gustav Rannis have concerned themselves with such an assessment in agricultural and manufacturing activities But such an exercise breaks down when other workers in the absence of the specific worker under observation could intensify their effort to compensate for the individual's loss. Similarly, a position bestowed on parochial considerations unrelated to the productive potential of the worker cannot be aken as employment in the economic sense. Such a situation would not be reflected in statistical data.

Large number of Variables

The provision of employment opportunities is an intensely human problem, and as it could be seen from Diagram I on page 41, it involves a large number of variables which require to be manipulated. One of the important factors in this regard which have so far been neglected is technology choice. This neglect *has historical reason. Now that the natural order of industrial expansion by its percolation effect has failed to energise development processes throughout the economy with the same vigour, the economics and sociologists have expressed their concern, and so the search for appropriate technology which could meet the challenge of growing unemployment in developing countries has now begun. The echo of this effort is noticed even in the Draft Plan 1978-83. The Draft Plan has acknowledged the inability of large and medium industries in absorbing more than a small fraction of the labour force and therefore has recommended adoption of employment intensive sectoral planning, regulation of technological change to protect and enhance employment, and promotion of area planning for full employment. The Draft Plan envisaged a large increase in the consumption goods of the poor which would create additional employment for wage-goods which could be produced by labour-intensive methods. The new strategy shows that the development and adoption of technology suited to Indian conditions, specially in relation to its growing magnitude of unemployment, cannot be assumed as a matter of course.*

Identification, development and adoption of appropriate technology would increase productivity of the workers without excessive labour displacement. It would take into account the social organisation, rural complexities, geological and climatic conditions, level of industrisation, distribution of income and wealth in different areas and so on. By an effective adoption of appropriate technologies the tempo of economic development and the rate of public participation can be greatly accelerated. The spectacular success achieved by Israel in her rural reconstruction programme has to a great extent been linked with the harnessing of solar energy and such other technological adaptations. The communist China has done well in construction activities, mini cement production, establishment of agro-industrial complexes and in small scale enterprises primarily on the basis of appropriate technology. If properly programmed, appropriate technological adoption could greatly help rural industrialisation in India and help eradication of mass unemployment to a great extent.

Appropriate Technology

But the programming for appropriate technology is an onerous task. It is *a priori* a normative concept. Dr. Nayudamma has very aptly stated it to be the technology adopted to "get us where we want to go". The precise goal of our progress is difficult to decide, and that is why incompatibility of our plan objectives has been stressed. In the absence of such well-defined goals, the identification of appropriate technology may not be very feasible. The Planning Commission has decided to study the economics of alternative techniques in a few important sectors. For this purpose, the Commission has identified eight activities, such as, food processing, edible oil crushing, sugar, textiles, leather, woodwork, ceramics (particularly building materials) and light metal fabrication. These are certainly very very important sectors of the manufacturing act but the exercise done with regard to sugar appended to the Draft Plan, does not seem to hi bull's eye. Without a comprehensive look at the situation, studies relating to alternative techniques be merely acadmic.

In order to make appropriate technologies op-tional, much thought has been given to them by vari international organisations; the subject has been disc sed at many national and international fora. The mea ing and the content of the term have however remain obscure. The World Bank has tried to provide valuab guidelines on the basis of which the developing cou tries could re-orient their planning activities. It ha distinguished four dimensions of appropriatenes namely, appropriateness to goal, appropriateness of pro duct, appropriateness of process, and cultural and environmental appropriateness. The Draft Plan 1978-83 has concentrated merely on the appropriateness of process, and that also in terms of labour intensity. The concept of labour-intensity itself has been left undefined, and the implications of adopting such a strategy have not been worked out in detail.

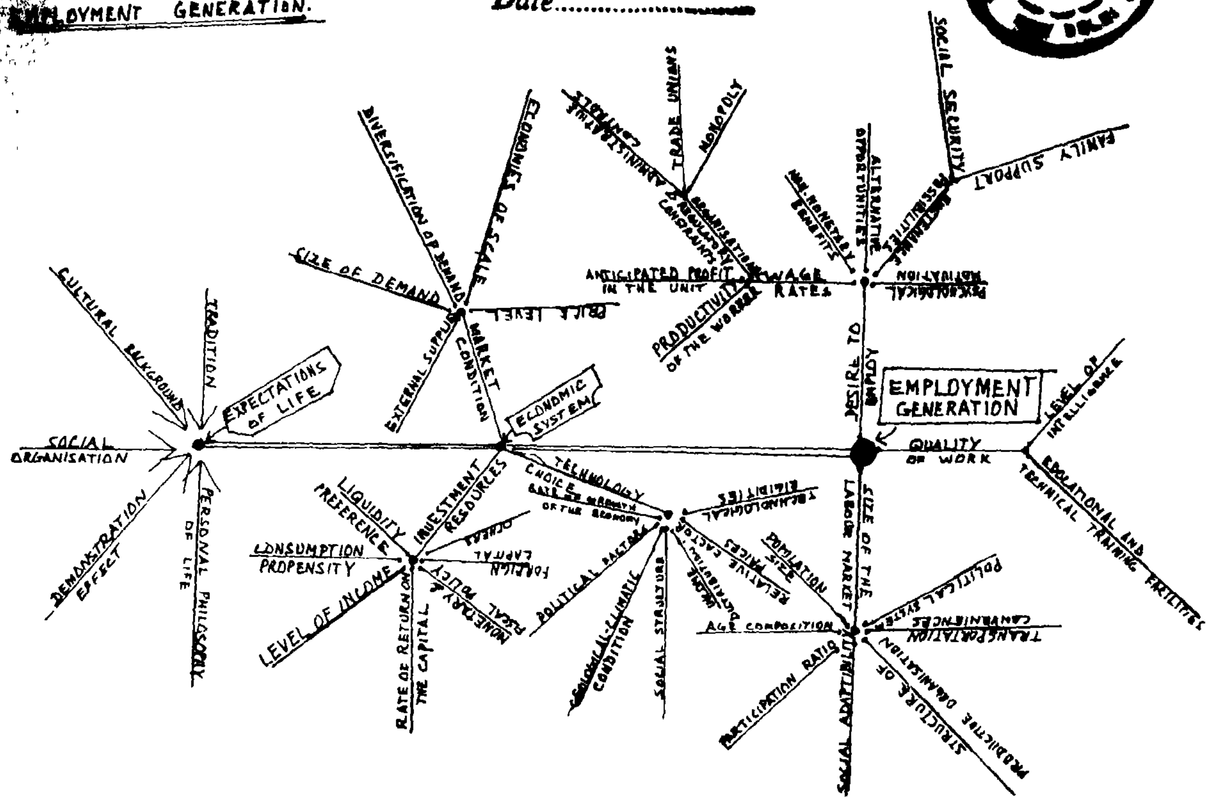
Labour-intensity

Genearlly speaking, the term labour-intensity is used in three senses, namely, the share of labour input in the total value of the output, the wages as a percentage of the value added, and the employment component of productive captial or of output. Except the last one, these concepts do not indicate the number of workers required for the job; they do not indicate the magnitude of manpower employment essential in the production process. The coefficients of labour intensity worked out under the influence of monopolistic and multinational organisations maintaining higher prices of the output and lower payments to the workers with streamlined managerial techniques could thereby reduce the share of the workers. Even the trade unions raising the workers' wages and other payments may artificially suggest the technique to be labour-intensive. The administrative control of wages, prices and distribution of production inputs would radically distort the share of the labour in the final output. What is worse is that the inefficient use of labour-force would create an illusion of labour intensity in the production system, whilst efficiency in capital use could suggest lower intensity of capital. The purpose of suggesting labour-intensive techniques is certainly not to ecourage inefficient use of the factors of production at the cost of others. The adoption of employment intensive projects would require a comprehensive regulation of labour-employment relationship, a different approach to wage-payments and a detailed examination of public and private sector projects in the light of operational guidelines recommended by the World Bank.

The approach would necessitate a detailed appraisal of every discrete stage of production processes. The aggregation of several production stages into one integral whole often conceals various possiblities of introducing a more employment oriented or locally adopted technique. A new approach based on the possibility of desegregating different stages of production could make many capital intensive projects as labour-intensive. For example, by isolating stone-crushing, homogenizing and nodulising processes and installing them at locations of mineral concentration, transporting

DIAGRAM I

RELATED VARIABLES OF EMPLOYMENT GENERATION.



the nodules of decentralised mini-cement kilns and grinding the clinkers at places of cement utilisation, the production technique for cement could be made much more labour-intensive. It could even economise over transportation cost and packaging. By altering standards specifications for different uses of the product and encouraging products of different specifications for varied uses, rigorous tests for the output could also be relaxed. This type of project appraisal for different items of production would open a new vista of industrial programmes very much increasing the employment content of the investment proposals.

The new technological strategy cannot be restricted to manufacturing activities. As it has been highlighted in the Draft Plan, manufacturing and mining sector, for the last half a century provided employment to merely 9 to 10 per cent of the total work-force. Other activities will have to be tackled in order to substantially boost up employment generation. The building construction, road-making, harnessing of power potential and recycling of agricultural wastes have tremendous possibilities. But, as it has been indicated above, intensification of labour use is only one side of the medallion. The increase in productivity must also accompany this effort. The work-force must be developed to cater to socially and individually desired goods and services. The work opportunities can only be gainfully expanded when there is diversification of consumption pattern, specially among the rural population. The need for introducing a carefully studied national consumption policy is urgent in the present context.

Social motivation

The generation of employment opportunities and introduction of appropriate technologies are merely certain, though vital, aspects of social engineering. Many other dimensions of the problem also require to be considered in depth. One important matter in the present context is related to social motivation. During the process of economic growth, structural changes in social organisation are bound to occur. but these changes must harmonise with general expectations of the people. This would foster a new social obligation, an acceptance of modified functional adaptations, and a new goal of life The laws of Manu sustained the country over the long duration of its history because it organised the various components of the society in an integral manner, each depending and complementing the other and every citizen considering it his duty to fulfil his responsibilities. There was social cohension. The imagination of the people was fired by a spiritual vision of soul's emancipation. At the time of industrial revolution in the West, the Utopian writers gave the vision of a new society, a radically different but comfortable and well-adjusted society in which mechanical innovations played an important role. The Gandhian Utopia emphasising the trusteeship concept was neither worked out in detail nor was it given an operational status. The social cohesion which could provide the self-generating impetus of growth, of which W.W. Rostow and others have spoken of as christian-spiritual spring of human progress, could only provide the effective motivation. The vision of a self-reliant economy with adequate employment opportunities and right technology choice will require well integrated family system and a psychological orientation of the people. Only on the basis of a well thought out socio-technological programme could the country hope to solve its employment problem effectively. □

Even her mother forgets how she has changed



Those who are nearest are often the last to notice the change—because they see her every day. But she minds it when they do not treat her as a different person. So sometimes she has to tell them how she has changed.

To most housewives in India, Hindustan Lever is the supplier of well-known products—Sunlight, Dalda, Lux, Lifebuoy and a host of others. But this company has grown and changed especially in the last five years—so much, that we thought we should tell you something about it.

Do you know that about 60% of our total investments in fixed assets today are in projects in the core sector or sophisticated technology? That we have an investment of nearly Rs. 3 crores and a recurring expenditure of about Rs. 1.5 crores per annum in the largest private sector R & D Centre in India? That over 50% of all our managers are scientists and technologists?

A company goes the way its capital is invested and its management chooses the direction. Our direction is clear: technology-intensive sectors of national priority.

Next time you see her, please remember she has grown and is changing.

HINDUSTAN LEVER LIMITED
A changing organisation

HLL-18-200

Education And Employment

D. P. NAYAR

Consultant, National Staff College for Educational Planners and Administration, New Delhi.

THE SPECTRE of unemployment is haunting the land and its grimness is increasing. The Prime Minister has promised to remove unemployment within the next 10 years. The Planning Commission is making an attempt "to make radical changes in the pattern of investment and to initiate a technology policy which should stimulate labour absorption at a satisfactory rate". In the early days of planning even senior educationists and educational administrators would flare up if anybody even insinuated that our education system in any way led to unemployment. Creation of employment was the function of the economy and education was only being made a scapegoat. As time passed and the number of educated unemployed began to shake the foundations of the social and political structure, a chorus of condemnation of the existing education system arose from every corner of the country. While this quitened the champions of the present system, who were themeselves its privileged products, a vigorour analysis of the deficiencies of the existing system and the remedies required therefor was nowhere in evidence. There were vague talks of half-understood innovations like work experience, vocationalisation of education. Its proof lies in the fact that nothing happened on the ground and the education system continued and still continues on the old pattern. The reports of the various committees and commissions only decorate the archives. The situation calls for calm, cool and deep analysis of the existing situation the identification of the relevant innovations and the effective management of change.

Existing Employment Situation

An analysis of the existing employment situation is necessary for identifying the support that education can give it. As the Planning Commission has identified in the Draft Five Year Plan (1978-1983), the total unemployment in the country is of staggering size. While there is very little chronic open unemployment the situation in regard to underemployment is extremely serious Further, the position has been worsening instead of improving in spite of considerable investment and development The *second* feature of the situation is the large size of the work force in agriculture and the increasing pressure on land *Thirdly*, in the modernising sector employment opportunities have not increased in proportion to the capital invested or the increased output. The proportions have actually declined and the total impact of development on the redistribution of the labour force has been practically nil. The *fourth* feature is the preponderance of the unorganised sector which accounted for 91 per cent of the work force according to the 1971 census. These are engaged in varying degrees of intensity and profitability in agriculture and small units production. The recent shifts in this sector show the increasing pressure on land and the decline and dessertion of the traditional sector with consequent increase in poverty Another feature of the unorganised sector is the preponderance of self-employment to the extent of 61 per cent of the total work force. *Fifthly*, no agrogative or macro approach to the problem of unemployment and its solution is possible. The labour force has to be broadly divided into cohesive groups and in terms of different localities and seasons. Each one of these has one's own problems. One broad classification is rural and urban. Another is the illiterate and the educated. These groups need further sub-divisions to identify really cohesive groups with common problems and solutions.

A word about those who enter the educational system. Eighty per cent drop out during or after the elementary stage and nothing is done to equip them for entering their parental professions with added ability and efficiency. Those who go through a secondary course generally drift to the towns to make the un-employment position there even worse. Of the post-secondary output, the most serious problem is that of the matriculates. Next come the art, science and commerce graduates. Women and third divisioners are other categories needing attention. Surveys conducted indicate large scale dissatisfaction among graduates with their jobs because of their un-satisfactory earnings. There is mal-adjustment between the demand and supply of different categories of people, varying in different areas due to limited mobility. especially at the lower levels. The unemployment among the technically trained is comparatively a recent phenomenon.

Causes of Unemployment

The causes of this varied and complex phenomenon of unemployment are manifold. Apart from the slow growth of the Indian economy, the main culprit has been the pattern of investment and the capital invested in the western technologies adopted due to the training of the decision makers as well as the easy availability of western models. In spite of professions to the contrary, the employment aspect was ignored. The poor manpower absorbing capacity of the modern sector and has led to the pattern of investment recommended in the Sixth Plan. The Indian experience has been borne out by world's studies of the effect of technology on employment. As Harbison points out .

> ". .. unemployment is rising rapidly in newly developing countries regardless of where they are located or what stage of development they have achieved. Further more, unlike the developed regions of the world, developing countries will not be able to solve their unemployment problems through the modern sector of their economies, even if these achieve rates of growth which are twice those of developed countries. Sadly it is modernisation itself which is largely responsible for this unemployment."

And he quotes the instance of Zambia, "with an economic growth rate of 15 to 18 per cent a year", which has "an extremely high unemployment rate".

He regards the choice of technology as more important than even the problem of population growth.

Another cause is the neglect of micro planning. The large variations in different areas and groups require detailed area-wise and group-wise analysis and planning. Though this need was emphasised again and again, it is with extreme slowness that these ideas are being translated into practice. The experience of the USA shows that for tackling the problem of unemployment in backward pockets micro-planning is inescapable And India is largely a collection of such pockets

The allocations to employment intensive programmes like elementary education, buildings for schools, primary health centres were also not adequate This defect is proposed to be remedied in the 1978-83 plan

Education, again is not related to the needs of the employment situation. Qualifying people for employment, however, is a basic responsibility of the education system. Without enabling an individual to get a foot-hold in life, his finer qualities, interested through education, do not adequately come into play and even get distorted. Also it is the most important consumer expectation, which can be ignored only at national peril. Further, employment (including self-employment alone assigns an individual his specific place in the economy and enables him to make his contribution to it in an effective manner His optimum utilisation through appropriate employment should also be a *matter of national concern*

The specific responsibility of education towards the employment situation is three-fold employment preparation, employment adaptation and, to some extent, employment creation. In all these tasks it has to work in close cooperation with the employment system. The first two tasks are well recognised The third needs a little explanation In developing countries there is a large reserve of unexploited natural resources, large effective demand satisfied through imports, but capable of being met indigenously largely through the development of know-how, and there is a huge potential demand, progressively becoming effective with economic growth The situation presents many opportunities and challenges which largely call for initiative, resourcefulness, an enquiring mind an adventerous spirit, cooperative attitude and leader-ship qualities which appropriate educational methodologies can develop

Inadequacies of the Education System

The inadequacies of the education system from the employment point of view needs a little deeper analysis. That the education system is not geared to the employment objectives is indicated by the increasing number of registrants at the employment exchanges, the widespread dis-satisfaction among emyployers of the quality of candidates, the existance of shortages side by side surpluses, general unwillingness to take up, or lack of capacity for, self-employment in spite of governmental help and so on. The education system is by and large a continuation of the old system designed for the needs of a colonial regime and requires considerable reorientation to fulfil the demands of economic and social development. Most of the funds allocated for education have, however, been swallowed by its break-neck expansion and aspects of re-orientation have been largely ignored.

Secondly, the priorities in the filed of education are not employment-oriented. From the point of view of employment as from that of social and political development-elementary education ought to receive the higher priority Majority of its output enter their parental occupations and remain with the mass of the people. Therefore, if they were equipped with the attitudes, skills and organisational capability, they impregnate the whole mass and all the occu... which they are engaged in, would get a shot in the arm instead of being progressively deserted. There is ample evidence to show that there is considerable room for increasing productivity with the help of elementary inputs. The main problem in developing countries is not so much to create new occupations, possibilities of which are limited, but to improve efficiency of the existing occupation and to ... subsidiary occupations to turn underemployment into fuller employment, instead of turning it into unemployment by large-scale migration to the ... This requires reorientation of the elementary education system, which is today largely academic, non se... and of very poor quality There is considerable w... and stagnation Even the expansion of elem... education is far from satisfactory The alloc... made have so far been inadequate and were th... to be axed in the interest of secondary or higher education, which are turning out the largest numb... the openly unemployed. Blag, Layard and Woo... came to the same conclusion through the rate of return analysis which showed that general undergraduate and secondary education are (were) ... expanded, primary and middle schooling are ... under-developed and engineering education is ... *at roughly the right level The causes of this ... phenomenon of the neglect of elementary edu... are strained resources, pressingly vocal demand at higher levels and almost no pressure for improvement of equality and even for quantitative expansion at ... level as the population remaining to be covered ... weak and non-vocal*

Apart from the question of insufficient resources and distorted priorities for education, it is the ... insufficient attention paid to the building up of the basic attitudes, skills and personality traits which ... essential pre-requisites for employment preparation, employment adaptation and employment creation. These basic attitudes are industriousness, respect for manual work and habit of cooperation and team work, initiative resourcefulness, an enquiring mind and an adventurous spirit, and power of observation, an eye for detail and manipulative skill. They are largely a function of methodology and need to be inculcated from the very beginning of child's life The system in India, as in most of South East Asia, is exmination-ridden with predominant emphasis on learning by rote. The University Education Commission (1949) called the "pernicious domination" of examinations as the "most pervasive evil in Indian education" While this system might have suited the colonial regime with its limited task of the maintenance of law and order and interest in turning out a cadre of people whose duty was to producing people who would take up the myriad of available and developing jobs in modern India and who would engage in successful confrontation with a challenging environment.

There is then the question of the quality of education. The quality of the average institution has been falling due to rapid expansion out-stripping the availabilty of essential facilities, the trade-unionism among teachers, the difficulties of the transitional stage to local government adversely affecting the management of schools, the entry into schools of first generation learners, political interference in the rational location

[illegible]s, admissions, appointments and examination [illegible]uption of student violence and so on. This is [illegible] situation which can turn out people fit to meet [illegible]enge of development and employment. To this [illegible] added the pedagogic shortcomings : the text-[illegible]icket, insufficient research support the inflexi[illegible] of the system and the general absence of evalua[illegible] arrangements for feed-back.

[illegible] curricula at different stages of education hardly [illegible] those who will drop out during or at the end of these stages. The largest ejection from the education system into the world of work takes place at the elementary stage and yet hardly anything is done to prepare them to fight under-employment, into which they go, through training in cottage industries, improved methods of agriculture and the organisational challenges they will be faced with. There is no information provided in regard to the job situation, no cumulative cards kept and no counselling provided. The situation in secondary schools is not very much better. The courses are largely academic and do not fit the students for the large diversity of middle-level jobs. In rural areas education also alienates them from their environment and leads them to increase the pressure on jobs in the urban areas. Universities and colleges are equally unrelated to the realities of the world of work. There is preponderance of arts courses and inadequate emphasis on science and technology. With the absence of specific skills and poor quality, the graduates produced are largely unemployable except in the very limited area of clerical jobs.

Vocational and professional education is not sufficiently geared to the needs of agriculture, industry and commerce because of inadequate linkages with the employment system. The manpower approach has been adopted in this field. There are inherent difficulties in such an approach. The evaluation of the Mediteranean Regional Project, while revealing the value of such an approach has, however, underlined its limitation and, as Hollister points out, "much work remains to be done to improve the reliability and sophistication of manpower forecasting" and until the the results of such research are available, the "Manpower requirements apporach rests on insecure foundation." Further, in a federal structure and in a country of India's size and variety there are serious limitations to mobility not only at the lower levels but also at the higher levels due to local patriotism, apart from other factors. And yet no data exists as to the extent of this mobility so that allowance could be made for it in preparing State Plans. Nor can the States have perspective plans of their own, independent of the Centre, on which they can base their own personnel requirements; and the Centre has not yet prepared a detailed perspective plan, broken down State-wise. As a result no State could do any worthwhile man-power planning and went on increasing institutional facilities for reasons of prestige and pressure of popular demand. Further, the assumptions about the growth of the Indian Economy, on which the estimates of engineering personnel requirements were based, were seriously upset by the Chinese invasion and the war with Pakistan on the one hand and the two most serious droughts in succession. While corrective measures have since been taken, the unemployment of technical people is still a problem. technical people is still a problem.

In addition to this maladjustment between demand and supply is the general tendency of the education and employment systems to stand apart. The result is that there is very little cooperation coming forth from industry in the practical training of technical personnel. The training of craftsmen and subsequently of the engineering graduates and diploma holders had to be practically forced on industry. Without perfect cooperation between the employment and the education system no worthwhile training can be imparted and no life-long programme of further training, which is indispensable in this age of rapid changes in technology and jobs, is possible.

Another cause of unemployment among technical personnel is the inadequate contribution of general education, preceding technical education, towards the building up of the attitudes and basic personality traits required for self-employment, which is the only safety valve in a situation where frequent maladjustment between demand and supply is inevitable. Nor does the period of technical education itself make any contribution towards that end.

The utilisation practices, due to inadequate understanding by employers of the role of technical personnel, as well as the unrealistic expectations of technical personnel themselves, on the basis of past trends, are also responsible for aggravating the situation. The avenues of marketing, sales and management in engineering industries and commercial enterprises are, for example, unwisely closed to engineers. Prof. P. M. S. Blackett of the Imperial College of Technology, London, is of the view that their employment in these areas is essential for realising the full profitability of enterprises. If that point of view is accepted by industry and commerce, the numbers required are likely to be so large as may turn the present surpluses into shortages. A close examination of the prevailing practices carried out in the Education Division of the Planning Commission revealed considerable underutilisation of engineers in both the public and the private sectors. As regards the unemployed engineers themselves their expectations are based on the salaries prevailing at the time of the industrial book. At realistic salaries, determined by the supply and demand position, the employers should be able to take on a much larger number of engineers than they do now, in place of unqualified people with whom they now manage.

The imperfections of the labour market mechanism are also responsible for the continuing high salaries enjoyed by arts graduates, which leads others to swell the supply in excess of the demand, leading to unemployment. Two factors interfere with the normal operation of the law of supply and demand. Firstly, the Government as the employer of two-thirds of the educated people does not find it politically feasible to reduce the salaries paid to their employees as would normally happen under the present position where supply is in excess of demand, or to prescribe scales for the new recruits different from those applying to the existing cadres. This to a considerable extent sets the pattern for private employment as well. Secondly, the joint family system, to the extent that it still persists, helps the educated to hold on for some time and thereby strengthens their bargaining position to some extent. As the London study has pointed out, "In an advanced country, lack of family support would soon drive them into employment, at almost any salary." Another factor which prevents a man from taking up any job that turns up is that a poor beginning can mar one's prospects for the rest of one's life in view of the prejudice that grows up against him and the absence of part-time or correspondence facilities which could have assisted subsequent vertical mobility. The

unemployment of graduates due to excess supply is also due to the fact that in view of the very limited alternatives of training and employment at the end of a secondary course and of any strictly laid down upper limits in regard to educational qualifications for most of the jobs, one's chances of getting a job improve with higher qualifications.

Another shortcoming of the education system from the point of view of employment is that it does not lend the assistance of functional literacy to the extension agencies. Work in this regard is being taken up on a national scale in the 1978—83 Plan.

Further, there is the general absence of a system of life-long training and retraining through the employment and the education systems coming together, though some beginning in this regard have been made by the Directorate General of Employment and Training.

Future Strategy

While the general strategies of development and the education system as well as their linking continue to suffer from the defects mentioned above, many valuable experiments have been and are being conducted and considerable thought has been given to many of the problems posed earlier upon which one can usefully draw for evolving future strategies. Many of these have already been included in the 1978—83 Plan

The first conclusion that emerges very clearly is that employment has to be a major objective of development and must be clearly reflected in the strategies adopted Secondly, no aggregative approach would be possible or meaningful. The problem of development as of employment can be solved only in the context of an area development plan, wherein all the resources—human and material—are effectively brought together for purposes of growth and welfare, laying down a clear line of action from the present reality to the future goals in the form of a perspective plan The emphasis on this was very pronounced in the Indian Fourth Plan It has been strengthened very much further in the Sixth Plan. Thirdly, development will have to be as labour intensive as possible, without unduly sacrificing economic efficiency This will need a detailed project by project examination and an appropriate technology mix evolved in each case to achieve the maximum substitution of capital by labour, with the assistance of research scientists, technologists and economists Further, licensing policies will have to be so oriented as to ensure that all ancillaries as far as possible, are reserved for small-scale industries Fiscal policies must show special consideration for small units The mechanisation of agriculture should also be highly selective, where a careful analysis of various factors involved clearly establishes its advantage and where the overall labour rendered redundant is not significant Agriculture employs 70 per cent of the population and stands between under-employment and explosive open unemployment. Another implication of the labour intensive approach would be that the area of cottage industries is protected and widened as far as possible and these crafts rendered economically viable through improvement of technology, without destroying their decentralised character, as was emphasised by the Expert Group on Social Development at Bangkok (January 1970) by especially directed research. For they provide the only possible subsidiary industry to the non-viable farmers and agricultural labourers in their own localities and the only possible occupation to the large number of rural artisans. *Fourthly,* family planning and population control must be one of the most urgent tasks to be taken up. For fewer numbers would seek jobs and those who do so would be better f[...] more productive and consequently most empl[...]

Development, Employment and Education

The education system must lend support [...] overall strategy of development. Taking the las[t] *first,* population policy must be introduced as a s[...] at all appropriate stages as well as be an imp[...] focus in adult education and functional literacy [pro]grammes. Educational institutions can provide p[...] the most effective and wide-spread extension a[...] for carrying the message of family planning [...] people and educating them in regard to its rati[...] *Secondly,* the education of girls should be given high priority. For, as was emphasised in the Reg[...] Seminar on Inter-relation between Population and [Man]power problems, Bangkok (January 1971), that r[...] the marriage age reduces fertility. The increased [edu]cation of girls may, however, increase the pressu[re] white-collar jobs unless cottage industries enabl[e] workman to increase her family income while rem[ain]ing at home.

A second major support that education can giv[e] the overall strategy, especially in the rural areas, [...] improve the technology of existing crafts without [des]troying their decentralised and employment inten[sive] character. *The research required for the purpose [can] not be done by highly sophisticated laboratories [or] scientists who are bigness oriented but by releasing [...] stimulating the inventiveness and creative urge of m[il]lions of people in close touch with the technology t[hat] is sought to be improved The myriad of suggestio[ns] cropping up will lead to the evolution of technol[ogy] which millions of workers concerned can absorb [...] task can only be accomplished by the educationa[l] institutions, where thousands of teachers and million[s] of students use the simple crafts as means of education and who are constantly asking 'the why and wherefore' of every single operation It is in this context that Gandhi's craft-centred education, working through the technique of correlation, has to be seen for the appreciation of its revolutionary import and relevance to the unemployment and under-employment situation being faced in developing countries. It is also how the entire* mass of the people in the developing world will rise with its leaders acting as leaven and not escaping from their fellows to join the privilege classes, as is happening today. The idea, however, in spite of "being given able and inspiring expression", has practically died in India for want of proper appreciation, adequate research and administrative support, and the usual hostility of the established system to new ideas. Yet this idea is of such fundamental importance to the whole of the developing world, especially in regard to its problem of unemployment, that it needs to be picked up and developed. It is slowly and haltingly being resurrected in India.

The third essential function which education has to perform is to prepare those students who leave at various stages to join the world of work The large majority leave the educational system during and at the end of the elementary stage (Classes I—VII) to enter their parental professions : agriculture and rural arts and crafts. It is too early for vocational preparation and training. So, the emphasis has to be on the building up of the attitudes, personality traits and basic skills required in all vocations and professions by using the local environment—so as to deepen interest in it and prevent alientation from it—and handling it through appropriate educational methodologies ; and giving a sufficiently stimulating introduction to agriculture and allied crafts, which the majority of the

take up at the end of, or even before, the course, to provide a basis upon which one subsequently through continuation and ex- education. That will enable them to have a level of employment in their own business by the return from it. Those who go further in studies will have developed those basic skills, on which more complicated skills can be built during e higher stages, and those attitudes which will stand em in good stead in whichever profession they go bsequently. There will be a third category who can- ot go back to their parental profession, like the sons non-viable farmers and of those whose occupations e dying out. They will have to be prepared for new bs, which should be selected on the basis of a care- l survey of the local area and its present and future eds, in conjunction with employers, so that they share e most and assist in their training. The detailed sur- y which was carried out in the Osmanabad District Maharashtra seemed to show that such cooperation uld be forthcoming from the present and future em- oyers. Such training can be best given on the sand- ich pattern. Provision of practical training in educa- onal institutions, as the experience all over the world ows, is neither efficient nor economical. The dura- on of each of these courses will vary according to e nature of the vocation selected.

At the secondary stage, the first question that has be decided is whom to admit The Education Com- ission has suggested selective admissions, both at the condary and university stages. That is, however, either feasible nor desirable for various social and litical reasons. The next question is how to prepare e students, inside and outside the education system, r appropriate types of work Those who have settled wn on farms and those who determine to take up rming after the secondary stage—the number of such ople is very small—can be assisted on their home rms, of which the four Regional Training Colleges ve a rich experience Institutional training during the ck season and assistance on their home farms during rest of the year through an extension service is pro- bly the best solution. It keeps the students on the m. The parents also learn a great deal from the ex- riments being done by their boys. Very large layout school forms can be avoided—a very important nsideration in developing countries.

In regard to those who can afford to go through full secondary course, the Education Commission s wisely recommended that "occupational schools" ould provide terminal courses like the Industrial aining Institutes. In other institutions, the aim should to give students work-experience as a part of gene- education rather than train them for any specific cation, which should be provided only at the higher ondary stage after 10th class up to which everybody ould get the same broad-based education. The res- nsibility of lower secondary education (generally asses IX & X), is, therefore, to further strengthen attitudes, personality traits and basic skills required the entire spectrum of the world of work through a oad-based, activity centred and community-problem- tred education, to identify aptitudes through the ovision of a large number of cheaply devised and efully supervised hobbies, and to give the students ployment information and vocational guidance. All s will be largely school-centred with the people from world of work coming in to inform the youngesters pplemented by the frequent visits of students to diffe- t places of work.

At the post-matriculation stage or the higher secon- dary, a large number of technical and vocational schools of varying types and durations exist today in India but their number will need to be considerably increased and the courses provided, not of a standardised pattern, but based on the existing and anticipated needs of the areas, in conjunction with the employment system. In India, the cooperation of industry had to be forced, as already stated, through the Apprenticeship Act. The ultimate aim of policy, however, should be to evoke the maximum possible voluntary initiative of industry integrated into a national system of training by the type of legislation that U K had enacted. As adaptability to change is an inescapable part of modern economic life, the courses should have a core of general educa- tion. They should also provide training in commercial and managerial parts of the vocations so that the stu- dents could set up, if necessary independent small con- cerns of their own Self-employment has to be given top priority in the context of the manpower situation in the developing countries. Institutional courses should be supplemented by life-long further education after the students enter their vocations for vertical and horizontal mobility

At the university stage, while restriction of numbers in general education is neither feasible nor desirable the Fourth Plan recommended that institutional faci- lities should be provided only to the extent that re- sources were available, the rest of the demand being met through informal channels of training : corres- pondence courses, evening colleges, etc. The expecta- tion from general education should, however, be cor- rected in that it is t. be regarded as a general upgrader of the labour force rather than as a preparation for specific jobs. A few experiments are also contemplated or underway for providing certain vocational courses as a part of the undergraduate course but these are only in very initial stages and not much experience is available for future guidance. One can, however, visua- lise a number of areas in the tertiary sector like book publishing, journalism, insurance, business management in which graduates and post-graduate degrees, could be instituted These areas will, however have to be carefully prospected before doing so. By and large, the products of general education must be prepared to take up any jobs that are available and when a society moves from limited to mass education, then the educat- ed take up the jobs which were previously being per- formed by uneducated people, though in the process the quality of the jobs and the return from them improve To some extent it has al- ready started happening : barber's shops have be- come beauty saloons, eating places have become restau- rants, and so on The transition will, however, not be easy. One measure which has been tried and found useful is the provision of market information and the setting up of university employment bureau The uni- versities and the employment exchanges are cooperating to make the experiment a success.

The specific responsibility of education towards the employment situation is threefold : employment pre- paration, employment adaptation, and to some extent employment creation.

The Secondary Education Commission recommended early recruitment to services which would prevent many entering the universities in the hope of capturing the few but highly coveted jobs. The Public Services (Qualifications for Recruitment) Committee also made that recommendation. But the qualifications were lowered in a very few cases, where also the graduates were allowed to apply. The reasons are not known but probably the poor quality of the matriculate, the difficulty of arranging in service training for such large numbers which will be a necessary con-commitant of early recruitment, the consideration of late developers, etc. weighed with the government. The 1978-73 Plan recommends the setting up of a Commission to go into the question of delinking degrees from jobs. The other suggestions made by Blaug and his friends like the raising of fees and the introduction of national service to raise private investment and thereby lower the return on it, as a disincentive to those who go up for higher education, are clever but largely academic. Raising of fees wherever it was attempted, resulted in strikes and violence and the decision in each case had to be revoked. The introduction of national service in a country where wages are low and many hands unemployed, has so far proved to be financially impossible.

As regards technical and vocational education, which is expensive, the Planning Commission has recommended the manpower approach to avoid surpluses if possible. For unemployment of technical people is not only more wasteful and frustrating, it also leads to flight of talent, unutilised capacity built at great cost, distortion of the pattern of utilisation of technical personnel etc. Frequent maladjustments of supply and demand are, however, inherent in manpower planning. To reduce its incidence, apart from the technical improvement of the manpower approach, a number of measures could be adopted like keeping the employment position constantly under review and applying corrections to a rolling plan on the basis of developing trends; periodically checking up the estimates with the help of the programmatic approach and building the results in the rolling plan; keeping the courses as broad-based as possible in the earlier stages and concentrating specilisation towards the end to the maximum possible extent so as to facilitate adjustments between the specialities of a common faculty like engineering in the light of a nearer vision of the demand; instituting adjustment courses at the end of the diploma or degree courses, which will have the additional advantage of promoting cross fertilisation of experience and inter-speciality interaction; and finally, preparing students for self-employment, which is the most important safety valve in the case of major maladustments. This can be done through the development of the personality traits required for the adoption of appropriate educational methodologies; the buildi[ng of] management techniques-industrial relations, m[arket]ing and sales, etc.—into the technical courses; building of engineering courses and institutions r[elated to] specific industries suited to specific areas and schools providing consultancy services to those o[f the] products who set up their own industries in the [sur]rounding areas; and finally, the provision of the fi[nan]cial aid and technical knowhow to those who set [up] their own industries by the State.

The other broad areas of professional education [are] medical and agriculture. The Indian experience [in] these areas carries the warning that any tende[ncy] to plan according to potential demand and ratios fix[ed] in the light of conditions prevailing in developed cou[n]tries will lead to considerable difficulties. The effecti[ve] demand has to be very carefully gauged for planni[ng] training programmes. A perspective of likely progra[m]mes of development should be drawn up in the lig[ht] of past trends, likely future development of the econ[o]my, etc. and the manpower needs of those programm[es] carefully calculated. This has been called the progra[m]matic approach as against the personnel investment ra[tio] approach. The saving grace in the areas of medici[ne] and agriculture, however, is the considerably larg[er] scope for self-employment, especially in view of t[he] Green Revolution, the increasing rural prosperity a[nd] the likely emergence of a large number of small tow[ns] and growth centres. The education system must he[lp] to build up the capacity for taking advantage of the opportunities.

Another significant area, which has not received ad[e]quate attention but which needs to be given very hi[gh] priority is that of adult education and functional lit[er]acy built round specific occupational groups. It [is] hoped that the 1978-83 Plan will fill this gap with t[he] needed technical efficiency. Mention may also be ma[de] of the importance of leadership training programm[es] among the youth and the large area of informal ed[u]cation, especially through the modern mass media, [to] carry on the process begun in educational institution[s] and at a pace much more rapid than is possible [for] them, to enable the population to keep up with chan[ges] and to carry on periodic adjustments in job requir[e]ments, apart from other things, dictated by it. No le[ss] important is the training within industry in regard [to] which only small beginnings have been made in th[e] country.

Research Support

Education should, however, go beyond supporting right strategies and help in evolving them. Universiti[es] can study, question, explore and experiment on a sc[ale] and in an atmosphere of freedom that no planning [...]

As regards technical and vocational education, which is expensive, the Planning commission has recommended the manpower approach to avoid surpluses, if possible. For unemployment of technical people is not only more wasteful and frustrating, it also leads to flight of talent, unutilised capacity built at great cost, distortion of the pattern of utilisation of technical personnel etc.

...tive agency can hope to do. To a planning agency the research support of educational institutions would be invaluable. The challenge of the unemployment problem has provoked many suggestions, and many more will occur to the universities themselves which will need to be investigated and rejected, accepted or improved upon. But to be able to fulfil these expectations, the universities must become problem-centred. The way universities can guide rural development, for example, has been well described in one of the most brilliant chapters, Rural Universities, in the report of the Indian University Education Commission.

Financing of Educational Effort

Education can, however, fulfil its role outlined in the preceding paragraphs if it is adequately financed. If the call of expansion and qualitative improvement have to be met, finances required go beyond the capacity of the State applying the national income and educational expenditure ratios prevailing in advanced countries. New sources of finance will have to be tapped by throwing a much heavier burden on the beneficiaries . local communities for elementary education, the parents for secondary and university education, and industry and commerce for vocational and professional education. This will be easier, as experience has shown in some of the Indian States, if benefits and taxation can be closely and directly linked.

To sum up, the challenge of unemployment has to be jointly met by an appropriate strategy of development and a properly oriented education system. Education has both to support the over all strategy and assist in it evolution. In the context of the employment situation prevailing in developing countries, apart from population control in which education can materially assist, development has to be labour intensive without unduly sacrificing economic efficiency. This requires the evolution and enforcement of the right technology mix for each project as well as increasing the scope and efficiency of cottage industries and agriculture by improving their technology without destroying their decentralised and labour intensive character. The educational institutions can assist in both these tasks—the universities assisting the technical departments and laboratories at the higher levels and the schools at the lower levels, through a craftbase and highly scientific education on the lines of basic education. Further, education must prepare students, who would enter life during or at the end of a stage, for the world of work. While the emphasis on the building of attitudes, personality traits and basic skills required for the world of work in general must continue through all the stages of education, actual vocational preparation must be provided for those who leave the general stream of education at various stages. The relationship to the age of the students, and the world of work into which they go, will need to be carefully ascertained. In this task the employment system must fully cooperate. Even then the educational institutions can give only limited and broad-based education. Specific education has to be on the job, though there also educational institutions must assist by carrying further the process of general education and teaching the theoretical and scientific basis of their work to the workers. In this age of rapid change this has to be a life-long process in which the informal agencies of education have also to come in a big way. If education is to meet the challenge of the situation, ways of giving it the adequate financial support will have to be found even by poor countries by spreading its burden over the beneficiaries in a more direct way as well as by discovering cheaper technologies of education. The most important task, hither to found intractable, is the management of the large-scale innovations required in the education system without which the whole exercise will be fruitless and only increase the already existing wide credibility gap between planning and performances which frequently brings to one's mind Ghalib's famous couplet :

> "Tere wade par jiye ham to ye jan jhoot jana
> Ke khooshi se mar na jate agar etbar hota"

(Oh my love ! if you think that I am living on the strength of your promise, then you are mistaken For if I had really believed you, I would have died out of (sheer excess of joy). □

......The challenge of unemployment has to be jointly met by an appropriate strategy of development and a property oriented education system. Education has both to support the over all strategy and assist in its evolution.

Countrywide debate

The next and much more difficult step is how to effect the radical transformation of the education system indicated above. Effective management of innovation requires patient and continuous experimentation by some of our experts, especially at the ground level ; a system of sifting of sound ideas which pass the stage of experimentation; and their continuous injection into the educated system at large, through a phased programme, where each stage is carefully prepared for. Educational change is the most difficult to effect in view of the fact that it involves millions of children and their parents, teachers and administrators, and others—each with his own psychology and "vested interest". A countrywide debate about educational reform is consequently necessary in addition to a sound personnel policy. The latter requires the identification of strategic point of action, handpicking of people who are convinced of the reform, placing them in strategic positions and giving them the necessary administrative and political support, apart from a policy of large-scale reorientation of the numerous functionaries who have to implement the reform. In regard to this continuous cycle of orientation and reorientation, the practice in the Phillippines easily comes to one's mind. Without these step any glib talk of large scale educational reform within a specified period would be dangerous and arouse false expectations and lead to frustration.

Each day, Modern Bakeries brings nutrition to over 8 lakh children. And that's not all.



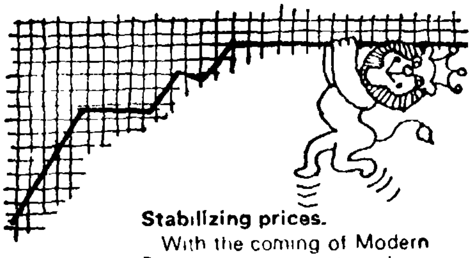
Bread to the common man.

When MBI began, it filled a big need in making a very convenient and common food item—bread—easily available to the common man.

A hygienic, ready-to-eat food India's first fortified bread. At a price he could easily afford.

And to look after the nutrition needs of people who need it most, we began making special breads for school feeding programs and for other social welfare schemes.

Last year, over 8 lakh people benefited every day from these schemes

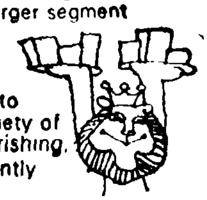


Stabilizing prices.

With the coming of Modern Bread an important thing happened to the whole bakery industry

MBI's policy of holding the price line set the example for other bakeries too and the much-fluctuating prices of bread became stable

Today, with 12 plants, we rank as the country's largest manufacturer of bread with a growing number of units to bring nourishment to an even larger segment of the population.

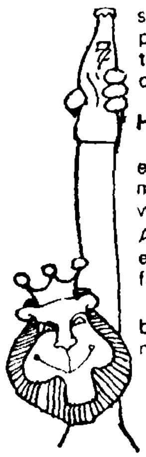


New products

The aim of MBI is also to provide an interesting variety of foods: foods that are nourishing, economical, and conveniently packaged too!

Modern buns were introduced with great success And MBI is also experimenting with Indian foods like nan.

Our R&D unit is also developing more mass-based Indian and Western style foods with the same underlying Modern objectives.



As the marketers of the new soft drink, Double Seven, MBI is providing employment opportunities, to a large number of bottlers and distributors in the country

Helping the small-scale sector.

In the future, we plan to encourage the small sector by marketing their foods through our wide distribution network

All these activities are an example of the Government's far-sighted policy put into practice.

A policy directed towards building a healthy people, a healthy nation.

MODERN BAKERIES (INDIA) LIMITED... Committed to nutrition

Employment Opportunities In Small Industries

Jia Lal Saaz.
Director (Technical Publicity and Exhibitions), Development Commissioner office, Small Scale Industries.

IN A CAPITAL-SHORT and labour-long economy like that of India reeling under a massive backlog of unemployment of the order of 21 million fully unemployed persons, and faced with the entry of an average of additional five million work force per year in the labour stream, the imperative of judicious utilisation of scarce capital resources to provide for the maximum number of jobs, is more than obvious. The current Plan envisages the creation of nearly 46 million new jobs in the next five years. It is expected that 20 million of these jobs will be created in the agricultural sector while another 9 million are hoped to be absorbed in construction, mining and large scale industry sector. The remaining 17 million are sought to be tackled by the entire decentralised sector which includes Khadi and village industries, handlooms, handicrafts, coir, silk and modern small scale industry sector. The last mentioned sector which is the special responsibility of the Small Industries Development Organisation, it is visualised, will create additional employment for 3 million people in a period of five years.

Jobs in Decentralised sector

A very large proportion of the new employment opportunities sought to be created in the decentralised sector will be in rural, semi-urban, backward and tribal arcas away from metropolices and big cities. The decentralised sector has the capacity to generate job opportunities of this high order at a cost the country can well afford In this context it would be worthwhile to present briefly an overview of the employment which already exists in some of the more important segments of this sector.

TABLE I

Employment Provided by the Decentralised Sector of Industries (Year *76-77*)

Segment	Employment in lakh
I. Small scale units under SIDO Purview (Registered and unregistered).	55.60
II. Handlooms	57.1
III. (1) *Khadi*	
(a) Fulltime	1.40
(b) Parttime	8.83
(2) *Village Industries*	
(a) Full time	1.94
(b) Part time	9.87
IV. Handicrafts	14
V. Silk	30
VI. Coir	5

The total full-time and part-time employment in small scale and village industries is estimated at over 40 million. The modern small scale sector with nearly 3 lakh registered units—35 per cent of them in rural areas—provides gainful employment to nearly 3 million people. Under its fold mechanical and metallurgical industries which is the biggest single group covering 380 items reserved for small sector, accounts for 50 per cent of the total employment. This group of industries covers foundry and rerolling units, handtools, diesel engines, machine tools, bicycles, sewing machines, locks, domestic utensils, pumps, auto-parts and a host of other items. Cotton and woollen hosiery units employ about 2.5 lakh persons. Leather industry provides employment to over 12 lakh persons. Employment opportunities upto 80 per cent are created by cottage industries, 17 per cent by organised small scale industries and 3 per cent by large industry This industry is well spread throughout the country's length and breadth. Similarly, the food processing industry has a very wide spread having in its fold small scale bakeries, house-hold units, fruit and vegetable processing units, confectionaries and sea-food manufacturing units, all of them together employing nearly 10 lakh persons. Under ceramics industry, come nearly 30,000 brick and tile manufacturing units, refractories and glass and glass products manufacturing units. They are estimated to employ 6-8 lakh persons. Among important village and cottage industries, coir gives employment to 5 lakh persons, carpet making to 1 lakh, handlooms to 57 1 lakh, pottery to 8 lakh, sericulture to 30 lakh, bidi making to 7.8 lakh, agarbati making to 1 lakh, cereal and pulses processing to 4 lakhs, oil ghanies to 2 5 lakh, sports goods to 50,000. In village industries like non-edible oil seeds, palm gur and products, resin and turpentine, vegetable and fruit sundrying, herbal and medicinal plants, lac and shellac, mat making, fibre making, bee-keeping etc. which mostly provide subsidiary employment, lakhs of people are employed on part time and seasonal basis.

Apart from making a major contribution to the employment, the decentralised sector is making a handsome contribution—over 40 per cent—to the total

manufactured goods in the country to meet the gigantic demand for consumer items.

TABLE II

Share of Small scale and village industries in industrial production (*1975-76*)

Industry	Production (Rs. in crores)
1 Public sector including joint sector.	8,240
2. Private large scale sector . . .	13,750
3. Small scale & Village Industries .	
(1) *Small scale Industries*	
(a) Factory sector (SIDO(1)	6,206
(b) Factory Sector (Non-SIDO) .	1,551
(c) Non-factory sector (SIDO)	4,987
(2) *Village Industries*	
(a) Handlooms . . .	1,600
(b) Khadi & Village Industries	200*
(c) Handicrafts . .	380
(d) Coir .	40
(e) Silk-sericultue	100
4 Total individual production .	37,054

*Figure relate to the units assisted by the Khadi and Village Industries Commission.

Many people may not know that nearly 60 per cent of the production in domestic electrical appliances, 75 per cent in TV sets, over 50 per cent in radios, and transistors, 50 per cent in paints and varnishes, 35 per cent in dye stuffs, more than 50 per cent in plastic items, 50 per cent in bicycle and their components, 40 per cent in sewing machines and parts, 66 per cent in laundry soap, 33 per cent in detergents and a major portion of production in about 100 items including hosiery, leather, and sports goods is being contributed by the small sector of industries.

The biggest advantage of small and village industries in the economic conditions prevailing in our country, is that they can gainfully employ many **times more hands** at a much lesser cost compared to the large scale industries. It is estimated that while in a labour-intensive industry it takes 6 months' salary to provide work for one man, in a capital-intensive industry the investment would be the equivalent of 350 months' salary. In concrete terms it has been calculated that while an investment of Rs 1 lakh can give employment to 20 to 25 people in small sector, it can generate only 3-4 jobs in large sector. And in the cottage industry, the same investment can easily employ 50 to 60 craftsmen and artisans. It is mainly due to this low cost employment generating capability, and capacity to handle production of consumer items that the promotion of small, village and cottage industries has been forged by the present Government as a major instrument in its policy of regeneration of rural and backward areas.

Need for organisational infrastructure

Given the magnitude of employment envisaged to be created through the instrumentality of small and village industries, the need for creating new organisational infrastructure or streamlining of existing agencies assumes great importance. Leaving aside modern small scale industries in urban areas where the entrepreneurs can fend for themselves or where there are already a number of agencies to cater to their needs, we have to think of the small-town men, poor artisans, and educated and uneducated unemployed in outlying areas to provide them institutional support in their small enterprises. Meticulously planned and efficiently managed small industries receiving fullest institutional backing would be a big factor in creating non-farm employment and arresting un-ending influx of job seekers from rural to urban areas. The task though formidable, can be successfully accomplished through motivation, training, extension services, provision of requisite facilities like credit, raw materials, machinery and marketing without too much paper work or running about

How proper organisation can help the weaker sections and artisans is illustrated by two examples The humble bidi which is a poor man's smoke made from Tendu leaves (present production 3 lakh tonnes) provides employment to nearly 8 lakh persons. Holding a monoply in the export of bidies and bidi-leaves, India earns about Rs. 1 crore foreign exchange every year. There are more than 2,000 registered factories employing about 8 lakh persons of all ages for collection of leaves and manufacture of bidies, the annual wage bill being in the range of Rs. 5 crore. About a decade ago, there was a big crisis in this industry in Kerala State so much so that thousands of workers had lost their livelihood. It had created a big problem for the State Government which decided to solve it by organising a Bidi Cooperative at Cannanore as a measure of support to the unemployed workers. With proper planning and dedicated efforts this Cooperative has become an ideal society disbursing over Rs. 3 crore as annual wages to its 15000 members whose daily out put is of the order of Rs. 4 lakh. Apart from paying higher wages to the workers than the prevailing market rates, it allows 20 days' leave in a year in addition to the benefits like provident fund, bonus, etc.

The second example relates to shoe-making which is one of the biggest industries in the decentralised sector contributing about 93 per cent of the total production The Leather Industries Development Corporation of Andhra Pradesh is implementing a useful scheme to help the small artisans. The Corporation has allotted small stalls to a large number of workers providing them with materials worth Rs 1800 per stall and an amount of Rs 425 for tools and implements It has been worked out that one artisan working with the help of one child can earn a profit of Rs. 20 per day which gives an average of Rs. 14 per head per day. The loan amount of Rs 2,250 is returnable in 3 years in 12 quarterly instalments of Rs 187.50 only. The cost of creating one such job opportunity comes to Rs. 1500 per head for urban areas.

The point sought to be emphasised here is that without the intervention of an agency which can organise group action—it may be a cooperative society, a corporation or an association of small entrepreneurs—it may not be possible to fully harness human and material resources in rural areas for massive creation of employment. Further, there is need for adopting different approaches for different types of industries to be set up in accordance with the condition obtaining in different areas. There can be no one overall backwards cure or strait-jacket approach in this matter Obviously, in backward and tribal areas, a beginning will have to be made with the taking up of those schemes which are simple, less technology-oriented, involve more labour and less capital and have a very short gestation period. These schemes should be able to pro-

vide fuller work and more income without giving a jolt to the existing pattern of life. In semi-urban areas, recourse can be taken to those schemes which involve a better technology and more capital. In any case, the programmes and policies have to be in accordance with the needs of the local communities capable of generating employment for them with the optimum use of their skills (which may have to be upgraded) and resources. Such programmes are bound to have a multiplier effect and contribute to the overall objective of growth with social justice.

District Industries Centres

To achieve a dynamic dispersal of small industries in hitherto neglected areas and regions, the Government of India in its Industrial Policy Statement of 1977, decided to shift the focal point of industrial development from big cities to district and taluk towns. To implement this Policy a new field agency known as the District Industries Centres (DIC) has been created which aims at stimulating integrated growth of small, rural and cottage industries through optimum utilisation of human and natural resources and supply of all guidance and aids to the small man in the industry in outlying areas under the single roof of DIC. Each DIC under the overall charge of a General Manager has seven Functional Managers each looking after the following needs of the entrepreneurs :—

(1) Economic investigation for preparation of feasible schemes and guidance.
(2) Machinery and equipments, assessment of needs, sources of supply and assistance in placing orders.
(3) Research, Extension and training : to ascertain problems and seek their solution and arrange training course in production and management techniques.
(4) Raw Materials : to arrange for cooperative or bulk purchase of local as well as controlled raw materials.
(5) Credit : to help in preparation and appraisal of loan applications and arrange flow of credit from banks and other financial institutions.
(6) Marketing : to organise marketing development programmes and find marketing outlets.
(7) Cottage Industries : One manager has been specially designated to pay attention to Khadi, Village and Cottage Industries.

After crossing the initial procedural hurdles, the DIC programme is now well poised for a major breakthrough in all the States and Union Territories. It is a Centrally-sponsored scheme which would be implemented by the respective State Governments under the overall coordination of the Central Government. About 250 DICs have already been sanctioned and in most cases the staff is already in position after undergoing intensive training. It is too early to talk of the achievements of the programme. But one fact is quite visible—that it is being put on the ground with utmost sense of urgency—action plans and project profiles are being prepared and new units are beng registered and flow of assistance being arranged promplty The new policy has, for the first time, introduced the concept of tiny sector (units with investment in machinery and equipment upto rupees one lakh and located in towns with a population of less than 50,000 and villages) which will be entitled to special consideration for obtaining various concessions and incentives. Further, the new policy objective of "Whatever can be produced by small and cottage industries must only be so produced', is sought to be realised with the immediate reservation of 807 products for exclusive manufacture in the small sector, liberalisation of procedures and terms for institutional finance, simplification of export-import regulations, and introduction of new programmes aimed at improving the competitiveness of the small industry products and solving their problems of credit, raw materials and marketing All this is bound to give a big shot-in-the arm to the small industry movement in the country, for creating new employment on a big scale. □

Employment at Little Cost

Fourteen girls and an young man of the village Erezha in Mavelikara Block of Alleppey district in Kerala have found out a livelihood, though in a small way, without much investment.

Studied upto S S. L. C, these girls hailing from poor families were the despair of their parents who found it just impossible to get any job for them. It was at this time that the local Nehru Yuvak Samaj, an affiliate of the Nehru Yuvak Kendra, Alleppey, offered to provide them training in tailoring free of cost They took advantage of this facility. On successful completion of training, each of them was given a brand new sewing machine, on 'group guarantee' terms Each one had to remit a sum of Rs 140 only towards the seed capital for the purchase of machines each costing nearly Rs. 600 The allottee will remitt the remaining portion of the cost of the machines in the State Bank of Travancore, Mavelikara, in instalments spread over 20 months, with a nominal interest of four per cent

P. N. Krishna Pillai,
Field Publicity Officer,
Alleppey.

Food for work Programme

continued from Page 18

should be such as not only create productive assets but are also relevant to the local priorities. In order to make the programme effective, it should be well planned and properly implemented. Suitable monitoring systems are essential for watching implementation and taking prompt corrective action, when necessary. Considerable logistics are involved in ensuring movement of foodgrains to interior areas where the works are taken up. Continuous adjustments are required to be made in the supply schedules depending on the progress of works at thousands of locations. Adequate safeguards are to be built into the system to prevent leakages. Instances are there when a part of the foodgrains supplied to the contractors has found its way to the open market. Many States have, therefore, adopted a coupon system to prevent such leakages. In this system, the physical possession of foodgrains is not passed on to the executing agencies. The agencies are supplied with coupons, which are given to the labourers, who in turn, receive their supplies of foodgrains from Fair Price Shops against these coupons. This highlights the need for expanding and strengthening the public distribution system in the rural areas, particularly the remote areas □

New Vistas of Employment



T. V. Satyanarayanan
Special Correspondent United News of India

AFTER NEARLY three decades of planning for development, poverty and unemployment continue to stare one in the face. In the country there are about 100 millions who are chronically malnourished and poor. Majority of them are labour households with little or no land of their own, depending almost exclusively for their earnings on the casual work they obtain. These people, for want of adequate food, are unable to attain their full potential and so lead a precarious life. While there is no gainsaying that since the beginning of the first plan, there has been an overall increase in the G N P. and national economy, the poverty gap has widened and simultaneously the backlog of unemployment, far from being contained, has been swelling continuously. The sizeable food-stock built up in the country has no meaning for a large percentage of the population, who cannot afford to buy that food for want of purchasing power.

According to the Planning Commission, 47.85 per cent people in the rural areas and 40.71 per cent in the urban areas were living below poverty line in 1977-78. Poverty line is defined as the level of income at which nutritional requirements of a person are met The requirements are said to be 2,400 calories per day per person in a village and 2,100 calories in urban areas.

Enormity of the Problem

The draft for the current medium plan has estimated the number of totally unemployed persons at present at 4 4 million. If, however, "unemployed" is taken to mean those who do not have regular work throughout the year, and therefore underemployed, the total volume of unemployment in terms of labour time is estimated at 20.6 million person-years. The enormity of the problem before the planners is thus obvious The earlier plans clearly demonstrated that economic growth by itself does not lead to proportionate increase in employment opportunities, or an improvement in the standard of living The benefits have not percolated to the poor and disadvantaged sections.

Though India ranks among the first dozen industrially developed countries, the path of industrial growth followed so far has not created adequate employment opportunities not to speak of providing jobs for the additions in the labour force caused by population explosion. The rate of increase of organised industrial employment has been less than three per cent compound per annum.

New Strategy

The new approach and strategy adopted in the current plan is to be viewed in this beckground. This approach is reinforced by practical principles of Gandhian economics. Hence the main thrust is on agriculture and rural development, cottage and small industries, and a series of schemes to promote self-employment. The attempt is to reverse the flow of labour from the rural to urban areas. A conscious effort is sought to be made to see that the benefits reach the hitherto neglected sections of the society, particularly the small and marginal farmers, landless agricultural labourers, artisans, and other weaker sections belonging to scheduled castes and scheduled tribes. These are people who have no access to assets and therefore, left out of the development process.

It is but logical that in the present crusade against poverty and unemployment, the major battles are to be fought on the rural front Usually, one equates agricultural growth with the high yielding programme. In the current plan, improvement of crop husbandary is a part of a more ambitious programme of integrated rural development

The census reports give an insight into the problems of the rural areas. According to the 1971 census, more than four-fifth of our population lives in rural areas, spread over six lakh villages. About nine-tenth of these people depend on agriculture for their living As such, the income of the rural households is directly related to either the size of the farm holdings and their productivity, or the wage employment in the farm sector. The Agriculture Census report of 1975 shows that 36 million operational holdings out of a total of over 70 millions are in the size-group of less than one hectare. This size group constitutes fifty-one per cent of the total holdings, while holdings in the size group one-to-two hectares form nineteen per cent Apart from small holdings, big stretches of precarious cultivation aggravates rural poverty. These include arid and semi-arid zones and flood-prone areas About three fourth of the

gross cultivated area had no means of irrigation and is at the mercy of unpredictable rainfall.

Potential Areas of Employment

The medium term plan postulates four per cent agricultural growth—3.98 per cent to be precise—for the five year period 1978-83. The plan also indicates that a higher growth rate of 4.02 per cent will be essential in the next five year period of 1983-88 to bring about a reasonable balance between demand and supply of agricultural commodities.

The break-up of this 3.98 per cent shows that foodgrain production has to rise at a rate of 3.61 per cent, cotton at 6.35 per cent, jute and mesta at 4.41 per cent, and oilseeds at 4.56 per cent. For milk and milk products a growth rate of 5.23 per cent is envisaged while the overall animal husbandry activities have to achieve a growth of 4.01 per cent Likewise, for fisheries, the targeted growth is 4.06 per cent. Significantly, to meet the demand for timber and fuel and to lay the foundation for a strong forest economy, a growth rate of 8.92 per cent is contemplated for forestry and logging. All these are important areas with a big potential for employment.

Agriculture

Capacity of irrigated agriculture to generate employment through adoption of modern techniques of maximising production and productivity, is well known. More significant is the strategy for rainfed areas, where the poorer farmers shed their sweat and blood Agricultural scientists have shown how by proper selection of crops and mixed croping routines alongwith a package of practices, farmers can engage themselves throughout the year and add to their income What is most important in rural development, is the qualitative change that can dawn on the life of villagers. In some of the dryland farming regions, for instance, where extension workers and agricultural experts have managed to make some impact, one comes across hard working small farmers growing improved varieties of jowar which give three times the yield of traditional varieties. In the areas where these farmers were growing one poor crop, they are able to raise, if rains are good, two good corps. With a little irrigation, the farmers raise even three crops, including a catch crop of vegetables in between jowar and hybrid maize or jowar and soyabean and the like. Our scientists have evolved an elaborate set of crop rotations, economic and suitable for various agro-climatic conditions These are based on elaborate trials in field conditions. Since the new crop varieties need greater care and attention, they appear to be better suited to small and medium farmers, who have more human and bullock power per unit area compared to big farmers The employment and income of these farmers will get a further boost if they can keep a cross-bred cow or two. More such cows can help them set up a Gobar gas plant, which provides, besides valuable manure, also smokeless oven to rural housewives In fact, an important feature of the integrated rural development programme is that for the first time some thought is given to remove the proverbial drudgery of rural women. In many areas of Rajasthan, the farmers' choice of subsidiary occupation may be sheep rearing. A poultry farm in the back-yard is an additional asset, and a small fish farm where conditions permit.

Animal Husbandry and Fish Farming

Similarly, animal husbandry can be equally rewarding for the rural people. A cross-bred cow can give a net profit of over Rs. 1,000/- per year. If brought under the cooperative fold, dairying can, not only provide the farmers gainful employment but also increase the nutritional standards of his family. For farm households and agricultural labour, there are also avenues open in sheep development, piggery development, particularly in the north eastern region, and poultry development. With the improved technology available in these fields, these can provide subsidiary earnings. The technique of composite fish culture that has been developed can make fish farming an attractive proposition. A study in the Central Inland Fisheries Research Institute, Barrackpore in West Bengal has demonstrated that half a hectare of water can give a net annual income of Rs. 3,000 to Rs. 4,000 to a fisherman.

Forestry

In forestry development, the main growth is to be achieved through a programme of commercial forestry, thereby shifting the emphasis from conservation forestry. Commercial forestry would involve clear-felling and replanting in a scientific manner so as to suit the local environment, and the projected demand for timber and fuel. The programme is expected to generate substantial additional employment. Looking at the forest resources in the country one often wonders whether it is not possible to tap it more imaginatively to meet our requirements of minor oils and thus eliminate the need for edible oil imports. Collection of minor oil seeds would mean more employment for tribal people living in forests and oil crushing is traditionally a rural industry

Industry

Allied to agricultural development are a number of small and village industries. The Khadi and Village Industries Commission has identified 23 village industries for assistance and development The Industry Ministry's move to have at district level a single agency known as District Industries Centre, to provide all the guidance and support needed by small and village entrepreneurs encourages many amateurs to launch new ventures.

In the field of village industries, there are a number of vistas waiting to be opened. To cite an example, many of the seasonal fruits and vegetables can be better utilised, if small fruit processing industries are set up in the growing areas.

The success of all these programmes calls for creating of adequate back-up facilities, and tying up many loose ends. A strong infrastructure particularly in the rural areas, is a must. Decentralised micro-level block planning is a sound concept. But it requires an army of trained and dedicated workers to implement it. The test of success of present planning lies not only in achieving full employment in ten years, which is the government avowed objective, but in upgrading the production capability and through it the general welfare of those sections left out of the development process so far. □

Planning for

Full Employment

Subrata Banerjee

Asstt. Editor
The Economic Times

After taking a hard look at the plan projection and strategy for employment, the author calls for a multi-dimensional approach not only to attain the objective of full employment but also a total radical transformation of the society.

THE UNION Industries Minister, Mr. George Fernandes has declared in his usual style that every single Indian will be employed in the next three years. This could well be considered an example of one-upmanship, when one recalls the Prime Minister, Mr. Morarji Desai, promising full employment only in ten years.

Magnitude of unemployment

According to Planning Commission experts the total labour force is expected to increase by 2.7 crore by 1983 The current unemployment backlog is estimated at between 1.7 and 2.1 crore. Thus, by 1983 there will be between 4.4 and 4.8 crore job-seekers in the country. The Planning Commission projection, not target-whatever be the semantic difference-is the creation of jobs for 4 92 crore standard man years. A standard man-year is considered to be nine month's employment for a single person

The Sixth Plan envisages an employment growth rate of 5.3 per cent per annum, with the gross domestic product rising at 4 7 per cent. This would obviously involve massive investment and equally massive mobilisation of resources, apart from a careful balance of priorities in their allocation.

The latest report of the Estimates Committee would, however, seem to question the very basis of the exercise of planning for full employment. The indications are that the unemployment figures so constantly bandied about are nothing but guess-estimates. They are not based on any scientific study. Even the figures available from live registers of employment exchanges are only indicative of the seriousness of the situation There are many employed persons who register as they seek to improve their prospects. What is significant is that there are many more who never anywhere near an employment exchange. There is no clear idea of the extent of rural unemployment, though this is the main source of massive reserves of unemployed manpower. In the circumstances there is a deliberate attempt to minimise the magnitude of the problem. It is maintined that chronic un-employment is only around 36 lakh. The rest are supposed to be employed for at least a few weeks in the year Hence they cannot be classified as unemployed.

Need for adequate Purchasing Power

Surely, it is not enough to provide employment to a person. It is necessary to ensure that through employment he can have an adequate purchasing power. Unless purchasing power is spread across a much wider spectrum than at present mass consumer goods industries cannot develop for the lack of market. This in turn inhibits the growth of feeder industries both heavy and medium. Thus lack of purchasing power is a drag on industrial development and economic growth. The objective therefore is to liquidate destitution and poverty, halt the process of pauperisation of the masses. As the Dantwala Committee on unemployment has rightly pointed out the extent of poverty is much larger than unemployment. Hence the need is to include under-employment and disguised unemployment, such as unpaid household labour, in planning for full employment.

The comment of action against unemployment (International Labour Officer, Geneva, 1950, P. 127) on the problem in the developing countries is equally relevant to India : "In contrast to the situation in advanced industrial countries, the problem is one of under-employment rather than mass unemployment; it is primarily agricultural rather than mass unemployment ; it is primarily agricultural rather than industrial ; the phenomenon is chronic rather than cyclical ; and moreover, the incidence of unemployment spreads

[illegible] over the bulk of the population instead of being concentrated among a relatively limited number of workers." In the cirumstances the Planning Commission's projection about creation of jobs would seem to be somewhat unrelated to actual needs, being based on insufficient data.

Planning Commission member Prof. Raj Krishna is of the opinion that the employment projection can be realised if irrigation, rural development, small industries, power and the minimum needs programme targets can be fulfiled. Previous experience would seem to indicate that the eminent professor is counting on a big if.

Sixth Plan Strategy

The Sixth Plan strategy is designed to create maximum job opportunities in the agricultural and allied sectors. A planned increase of irrigation capacity by 1.7 crore hectares alone is expected to provide the major share of 2 27 crore man years of jobs expected in the agricultural and allied sectors. The power programme, the construction complement of the plan, and the expansion of infrastructure and services are expected to be other major sources of employment generation. The manufacturing sector, except for small industries, is considered a very low third in the strategy adopted.

The logic is that the areas which have been given priority are labour-intensive. Hence the startegy is to transfer a comparatively larger share of resources to these areas at the expense of capital-intensive industries and even the public sector which has been allotted a "complementary" role. It is also felt that people must be provided jobs in rural areas to prevent excessive migration into urban areas.

This strategy itself has been questioned Experience of various agricultural development strategies tried out since independence has only underlined the basic truth that agricultural productivity cannot grow without distributing land to the rural poor, bringing about relevant changes in the technology and mode of production of this section of the population and expanding their subsidiary activities to sustain even a fraction of the rural surplus labour.

Small-scale Sector

Small scale industrial development in rural areas cannot possibly succeed without massive inputs towards infrastructural facilities designed to meet the needs of the rural poor. To be relevant such a programme must be related to local natural and skill resources and have local market. This means linking rural industries to agricultural and consumption needs. This is related to the purchasing power of the rural masses.

Without taking these factors into consideration the district industrial centres programme can be reduced to helping the rural rich to absorb family labour reserves with the assistance of government subsidies. This [illegible]ready happening in some of the irrigated areas. [illegible] institutional support necessary to bring about a [illegible]e of direction from the rural rich to the rural poor [illegible]t possibly be mobilised without a strong political [illegible] which is lacking in the entire political spectrum the extreme right wing to the establishment-orienftists. The extreme left would like to work outthe system and hence are not relevant to this discussion.

The reality that needs to be faced is that rising unemployment is an expression of the stagnation of the economy. Our overall average growth rate has been about 3.5 per cent The spurt that the economy got in the first two decades of independence was really due to starting from a very low base Since the mid-sixties the strategy of mixed economy has been facing a crisis. This is the crisis of planning as we have known it so far And exercises such as rolling cannot remove the flabbiness of the plan

Industrial Growth

It is theoretically recognised by the Planning Commission that basic industrial growth must continue to sustain agriculture and the production of wage goods. In practice withdrawal of capital from high technology and low return areas can only weaken the industrial base built up with much sacrifice By further stagnating economic growth this will reduce employment opportunities. Indiscriminate import of capital goods, collaboration with multinationals at the expense of proved self-reliance, as is happening on an ever widening scale, can only further strangulate the economy through underutilisation of capacity already created and thus add to the unemployment problem Such measures can only create, in practice, the necessary conditions for the penetration of multinationals into the economy High unemployment means a permanent reserve of cheap labour power, the major source of super profits so much desired by multinationals and their local agents

The need is therefore, to take a hard look at not merely the Plan projections about employment generation and the strategy selected for its realisation, but at the overall development strategy The employment plan if it is not to be a mere cosmetic operation must be considered as part of the overall development perspective and the strategy relevant to it This demands not merely a total restructuring of socio-economic relations in the countryside, but also a change in the industrial mix with a productive linkage and balance between basic and intermediate industries, large, medium and small industries and agriculture and industry

Multi-dimensional Approach

Planning in this context cannot be confined to mere identification of priorities and allocation of resources The private sector must be brought under the discipline of the Plan The total anarchy of the free market cannot be contained through half-hearted measures of control Decentralisation to be effective and purposeful must be balanced with centralised planning.

The problem of unemployment is also related to manpower planning in the framework of the total development perspective and strategy. Hence education too must be given a new orientation. It will have to be restructured to strike a balance between the needs of cultural advance and rapid economic development. The objective must be to reach the benefits of economic growth to the widest section of the population. Poverty, unemployment, cultural backwardness are all symptoms of the crisis of an economic and political system. Hence planning for full employment calls for a multidimensional approach aimed at a total and radical transformation of society. The days of tinkering with change under cover of populist slogans and unrealiable targets and timeframes are over. ☐

PD/78—8



Planning for Rural Employment

Pradhan H. Prasad
Professor of Economics
A N.S. Institute of Social Studies, Patna

"Semi-Feudal" Production relations is the main reason for our low level of employment and backwardness of rural areas. The only solution for this problem is to disintegrate "Semi-feudal" production relations, by bringing about some basic institutional changes, which will be generating gainful employment and income for the rural poor

THE PROBLEM of unemployment and under-employment has been with us for ages. Measured in ns of person-day, it is estimated to be equivalent more than 20 million persons being involuntarily ployed on a typical day It is a staggering magnitude ere is, however, not much of difference between centages of work force unemployed and under-emyed in rural and urban areas The percentages of son-days seeking and available for work to the total our force person-days in a typical week happen to 7.48 and 8.53 in rural and urban areas respecely. But as the rural population and rural work ce respectively account for 80 09 and 82 26 per cent, the problem in term of human misery is more severe in rural than in urban areas

It is needless to say that we showed great concern about this problem after independence We pledged to solve it at the earliest But even after about three decades of planning, we are nowhere near the solution of the problem We have not yet been able to make any dent into its severity On the contrary, it has been on the increase. There is also no evidence to suggest that we are moving at all in the direction of solution of this problem, in spite of the present Central Government's pledge to solve it by 1986-87.

Our failure to solve this problem is related to our incorrect analysis of the basic reason for such a situation in rural India. It has been found that in most part of the rural India large bulk of agricultural labourer and poor-middle peasant households continue to remain "chronically deficit households". They therefore continue to take consumption loans on a fairly regular basis from the rural rich (who mostly happen to be the big landowners) and thereby suffer from informal bondage, social humiliation and degradation. The informal bondage arising out of extreme poverty of the bulk of agricultural labour and poor middle peasant households results in rural rich enjoying enormous economic benefit in terms of "distress sales", cheap and assured labour, better terms for leasing-out land, and acquiring the lands of rural poor almost at throw away prices disregarding all laws to the contrary. Informal bondage is also enforced by leasing-out small bits of land to agricultural labourers.

Incorrect Analysis

This has been the source of enormous economic and political power in the hands of the rural rich. This has allowed them to claim the bulk of benefits that flowed in the area either in the name of development activities or for welfare of the rural poor. As a matter of fact most of the aforesaid activities were designed for this purpose because of the dominant political position occupied by the rural rich in such areas. This "semi-feudal" production relation is the basic reason not only for a low level of employment in the rural area but is also responsible for very inadequate development in the rural sector even when moderate dose of public investment continued to flow in this sector for about three decades.

Dominant class interest

The dominant class in such of the rural areas, even decades after the transfer of power, maintains an interest in the continuation of informal bondage and, therefore, in mass poverty where vast bulk of agricultural labour and poor middle peasant households live in perpetual deficit. The aforesaid gains arising out of this backward agrarian structure (which we term as semi-feudal) has robbed the rural rich of enthusiasm for rapid development which, if allowed, is likely to improve the economic condition of the agricultural labourers who can thereby free themselves from the informal bondage and start the disintegration of this "semi-feudal" production relations. That is why the resources for developmental activities are either wasted away or are used up in conspicuous consumption. This is why the state power hardly comes up with a sound policy of disintegration of "semi-feudal" production relations and overall rapid development of agriculture. It is this which explains the low utilisation of infrastructure meant for agricultural development and almost negligible net investment in agriculture.

Wrong approach

Thus, our failure to understand the role of "production relations in the context of development, has [illegible] only led to aggravate the problem of rural unemployment and under-employment but has also adversely affected the growth of other sectors in the economy. We went ahead with a wrong approach to developmental planning where "scarcity of capital" rather the "production relations" was regarded as the main reason for poverty and unemployment. Therefore, the objective of growth of capital and income-figured much more prominantly than anything else in our planning models. This also prompted us to argue strongly in favour of massive inflow of resources from outside the country. Employment creation was looked upon merely as a by-product of growth of capital. Moreover, in emphasising the investment approach to development, we also assumed that there is no scope for rapid and massive increase in gainful employment in agricultural sector of the economy. It should be noted that there was no empirical basis for all the aforesaid assumptions and formulations. But still we adhered to these inspite of the empirical fact that per acre employment in agriculture in Japan was three times more than in India. Even Egypt and China proved to be better in this respect than India. We, thus, ignored the positive role which could have been played by *massive investments* in surface irrigation, drainage, flood control and afforestation which were not only based on labour-intensive techniques *of production* but offered a very high multiplier value for employment and income generation in rural India. This would have been dynamised the other sectors of the economy also in a big way leading to rapid increase in employment and income elsewhere. Instead we opted for something else.

End of colonial rule brought some initial reduction in the outflow of surplus from this country. Then there was a considerable amount of accumulated surplus which the Second World War had provided for us. These were reinforced by net inflow of foreign resources in the shape of aid and loan as we launched "investment planning". All these spurt in investment and public expenditure boosted the demand for agricultural and industrial products. The income and exepnditure of the possessing classes began to show upward trend. All these also favourably affected agricultural growth. But it could not go very far because our policy did not seriously disturb the stranglehold of "semi-feudal" production relations in most part of the rural India. Though the landlords like zamindars, Talukdars, Jagirdars and Inamdars, suffered an initial set-back because of the transfer of power, the state power however passed in the hands of big tenant-cum-landlords and bourgeoisie. The initial set-back suffered by above mentioned landlords were limited to the extent of abolition of their revenue collection rights. It is true that the native princes also lost a lot of power which they used to exercise in their domains, but still they wielded quite a good bit of feudal power. And, therefore, the process of disintegration did not go very far. A significant part of these landlords and the princes remained the owners of large areas of land and by mid-fifties they consolidated their position as powerful class and thereby strengthened the power of the "semi-feudal" rural rich in the Indian polity.

Semi-feudal agrarian relations

It is mainly because of the continuance of "semi-feudal" agrarian relations that the policy of devolpment of capitalism under state patronage which led to huge public investment in capital industries, public utilities, communication and in other infrastructures, ultimately ran into rough weather. Private industrial and trade sectors, of course, responded favourably to the spurt in public expenditure and investment in the name of planning. Therefore, investment in the

industrial sector and the industrial output showed considerable gains in fifties. Korean boom also boosted the profits in the industrial and trade sectors so much so that the production of engineering industries registered about 50 per cent of annual growth rate in mid-fifties.

This phase, however, did not continue for long. The accumulated surplus was exhausted. The pace of whatever little growth in agricultural output that we were having in the fifities slackened significantly in the sixties, thanks to "semi-feudal production relations. The wrost in this direction came with about 16 per cent decline in agricultural production in 1965-66. Unevenness in agricultural development became more and more pronounced. The resources base of the plan outlays began to shrink. Foreign aid and loan had provided some cushion but this also could not be maintained for long. On the other hand it allowed imperialism to consolidate itself in this area.

By this time foreign debt servicing became a additional, and rather, heavy burden on our resouces. The external debt servicing charge increased from Rs. 23.8 crore in the First Plan period to Rs. 542.6 crore in the Third Plan period, a more than twenty-fold increase. The situation became so critical that we had a three year plan holiday from 1966-67 to 1968-69.

Since early fifties itself, in the absence of diversified and dynamic market for mass consumption goods (because of inadequate growth of output and employment in rural sector), both the volume and the type of industrial output, by and large, remained closely linked to the volume and pattern of Plan outlays. There was, of course, some growth in sectors such as automobile, radio, transistors refrigerator and airconditioner manufacturing. But as these catered to top income group, a very small percentage of the Indian society, these remained in the narrow confines of the luxury goods sectors.

With inadequate growth, recurrent fluctuations and growing unevenness in agriculture production and increasing backlog of rural unemployment, the growth of demand for industrial products was adveserly affected. Our plants running in difficulties and in absence of dynamism in the demand for consumer durables (including those of luxury-goods sector), the industrial sector plunged in a serious crisis after mid-sixties. The annual rate of increase in the production of large and medium scale industries fell from 7.9 per cent in 1950-65 to 3.7 per cent in 1965-75. The unutilised capacity in manufacturing industries increased from 12 per cent in 1965 to 22 per cent by 1973. In capital goods industries it increased from 15 per cent to 38 per cent. Even the bank nationalisation in late sixties and increase in availability of institutional finance coming in a big way to aid the industrial sector, could not improve either the investment climate or the capacity utilisation.

New approach

In the absence of dynamism and diversification in demand for industrial products the industrial sector continued to be plagued by increasing level of unutilised capacity. The number of sick units kept on increasing. Thus the inability to tackle the problem of rural unemployment adversely affected the employment and income generation in urban sector also. Still we did not draw any useful lesson from this; we drifted away.

In an effort to infuse dynamism into the economy specially in the industrial sector, a new approach was initiated a couple of years earlier. This was reflected in the Union Budget for 1976-77. It was mainly in terms of tax reduction in order to improve capacity utilisation and investment climate in the country. As expected, it failed to achieve its end. The failure was in-built in the policy structure itself. We have now reached a stage where any policy to boost up the investment and to improve the capacity utilisation will run into rough weather in the absence of diversified and dynamic domestic market for mass consumption goods. Moreover, as the tax reduction policy and fear of inflation kept the volume of public expenditure at the low and with "semi-feudal" agrarian relations holding its way, there was no question of demand for mass consumption goods showing any significant improvement. Tax relief countinued to remain the major plank for getting the industrial sector out of the rut in the Union Budget for 1977-78 and 1978-79. It lacked the boldness which was required for massive expansion of economic activity in the country specially in rural sector. The result was obvious. The economy failed to dynamise itself. The industrial sector remained sluggish. No doubt we have been favoured with three successive good harvests. This and the advent of new technology in areas where semi-feudal production relations are weak, have brought about some improvement in agriculture. But it is hardly adequate. We are somewhat better-off with food-grain production. But here also while the buffer stock of foodgrains goes on increasing, milions remain half starved. On the other hand edible oil imports rose from Rs. 64 crore in the April-December 1976 to Rs. 514 crore in April-December 1977. And there is hardly any evidence to show that unemployment and under-employment in rural sector has not been on an increase.

Measures for employment generation

The only way out of this situation is to undertake policy measures for the disintegration of "semi-feudal production relations which plague large part of rural India. It needs, on the one hand, some basic institutional change and, on the other generation of gainful employment and income for the rural poor. The measures can be listed as follows :

(i) Enforcement of the laws relating to land ceiling on holding and other land reform enactments.

(ii) Enforcement of schemes to completely relieve the weaker sections of the population from debt burden.

(iii) Management of all rural development programmes, development of small-scale and cottage industries, development of fisheries, poultry development, dairy, bee-keeping among others by mass organisations of adults from the agricultural labour households

(iv) Village water supply, minor irrigation, village housing scheme, land reclamation, soil conservation, earthworks, canal digging, construction of roads and other public buildings, afforestation and tree planting, clearing of forests and management of educational institutions also to be entrusted to the aforesaid mass organisation.

(v) Massive investment in irrigation, drainage, flood control and afforestation.

(vi) A statutory reservation of some sectors of production for highly labour-intensive technique is also required. It should be done in a manner that it does not increase the price of wage-goods in the country and therefore does not adversely affect the poor. The poor will have the option to buy from the alternative mix of commodities than those reserved for labour intensive technique. The textile industry offers a very good example, in the Indian context The product of this industry has a widely dispersed market and has no close substitute It may be possible to enforce a regulation whereby the weaving of some popular variety of textile is reserved exclusively for the 'process of production not using power' For example, the 'process of production using power' should be allowed to manufacture only monocoloured textiles. Processes such as the printing of textiles and the weaving of multicoloured textiles, would thus be exclusively reserved for the 'household and small producer sector not using power'. This would mean an increase in the relative prices of such textile (in the absence of subsidy) Even then, there is likely to be a sufficiently high demand for such varieties, because the rich in any case will buy it It is even possible to visualise that in the initial phase the demand will be greater than the production. As the demand will be dispersed all over the country, there will be sufficiently high rate of earning for 'household and small producer sector not using power' resulting in a push for the expansion of the sector. Suitable policy measures associated with training programmes for weaving and hand-printing of textiles and marketing may result in the quick expansion of this sector all over the country. One can think of other kinds of such protection. In any case the expansion of 'household and small producer sector using power' will effect some what adversely the textile mill-sector. The proportion of population employed in the 'process of production using power' may even decline but the proportion employed in textile production as a whole will increase very rapidly and the increase in employment and earning will be dispersed all over the country. The economic gains to the weaker section of the population will be considerable. As the mill-produced monocoloured textiles will be available for low income earners, these varieties will constitute the basis-good part of the wage-good mix. Moreover, since subsidy will not be the kingpin of such policy measures, there is little possibility of emergency of 'intermediaries' and 'parasitic elements' which has been the bane of the past three decades of developmental planning. Similarly the production of leather-goods may also be reserved for 'process of production not using power'. All these are likely to result in a rapid rate of growth of rural employment

New Agricultural technology

Investments in irrigation, drainage, flood control and afforestation are not only labour intensive in character but are also land augumenting and provide scope for better water management which is very favourable for the adoption of new technology in agriculture. There fore such an investment undertaken at a massive scale not only will generate sizable employment in the rural sector but will also generate a great demand for mass consumption goods and thereby will give a big push to industrial development leading to increase in employment in other sector so as to reduce pressure of population on land. The total investment in the aforesaid sectors may be stepped up to a level which may bring about near full-employment situation in the country within a period of five years. It has a potential to generate a high level of industrial and trading activities in the country, bringing about an end to destitution and involuntary unemployment. It can change the industrial climate in favour of high investment and better utilisation of capacity even *without subsidies* and *tax concessions* The policy, however, will initially generate inflation. But it will not be of a serious nature because part of the increase in demand for goods will be met by our existing buffer stock of foodgrains, increase in capacity utilisation in the industrial sector and import of some essential items of consumption by using our foreign exchange reserve. Strengthening of the public distribution system will also be of much help in mitigating the ill-effect of the inflation But as the mild inflation will be associated with a very high level of employment generation both in rural and in urban sectors, it will not be as bad as in the past. ***Inflation has earned a bad name for itself in our country because it was never associated with decrease in unemployment*** Thus, the fault lies in our approach to the solution of the problem of rural unemployment than on anything else The disease as we pointed out above, lies elsewhere in the economy and in the thinking of the ruling classes If that is taken care of in the manner suggested, above, the problem of rural unemployment and consequently that of urban unemployment can be solved within five years. □

Investments in irrigation, drainage, flood contiol and afforestation are not only labour intensive in character but are also land augmenting and provide scope for better water management.



Iaharashtra's Employment Guarantee Scheme

Avinash Godbole,
Sr Correspondent
Bombay

Evolved through a process of trial and error the Employment Guarantee Scheme, launched by the Government of Maharashtra, has attracted wide attention. Backed by statutory support it seeks to concede to the rural poor the right to gainful employment through manual work.. Under the scheme the employment seeker will have to be paid unemployment allowance if he or she is not provided work within fortnight from the day of registration. There is complete equality of wages for both male and female workers, paid partly in cash and partly in kind at the rate of minimum wages for agricultural labour.. ...

LTHOUGH PROVIDING employment to those who are able to work has been one of the main ctives of successive Plans, and full employment is ultimate goal, it has not yet been possible for the on to reach anywhere near it even after 30 years levelopmental efforts. The number of unemplo- instead of decreasing, has increased enormously it is the resolve of the new Government at the re to banish unemployment in a period of 10 s. For this purpose, a new direction to planning been given, under which, more attention will be to agriculture and rural industries. By introduc- Employment Guarantee Scheme five years ago, the ernment of Maharashtra, has made some progress rds the goal of full employment

Trial and Error

The scheme in its present form, was evolved after many a trial and error during the past 10 years and more. Its origin goes back to 1965 when the State Government introduced a pilot scheme known as "Page" (pronounced as Paagay) Scheme for an integrated area development in Tasgaon block of the Satara district to test the possibility of providing productive employment and creating opportunities to increase the incomes of the rural poor, particularly, the landless agricultural labourers and the small and marginal farmers. Further more, in 1969, a scheme Guaranting employment was also undertaken on a village basis in selective blocks. Thereafter, in 1972-73, a 15-point programme for economic development was chalked out which

DPD/78—9

included a scheme of guaranteed employment to those who want it in rural areas It can thus be said to be a starting point of the Employment Guarantee Scheme (EGS) though the idea has been modified in the wake of experience gained in its implementation.

But before the Government could start it, the State had to face drought conditions for three successive years from 1972—74 and was therefore, compelled to utilise all its energies towards mitigation of the sufferings of the people, affectd by the drought conditions. But the relief works programme during the drought-affected years had given impetus to rural works such as road building, nala bunding, percolation tanks etc and the State Government thought it wise to continue those even after the calamity was over Accordingly, the Government continued the works under the Employment Guarantee Programme from December 1974 and spent over Rs. 13 crore

In 1975, however, it was decided to finance the scheme from a special fund and for that, special taxes and levies were imposed as shown below:

(i) Tax on Professions, Trades, Callings and Employment on slab basis, subject to a maximum of Rs 250/- per year
(ii) Additional Tax on Motor vehicles
(iii) Additional Tax on Sales Tax
(iv) Special assessment of irrigated agricultural lands
(v) Surcharge on land revenue
(vi) Tax on non-residential urban lands and buildings under Education Cess Act

The State Government makes a matching contribution equal to the net collection of these taxes and levies every year These two amounts are credited to a separate fund as mentioned above from which the works under the Scheme are financed If there is any balance in a particular year, the same is carried forward to the subsequent year

After working the Scheme for three years, the State Government decided to give statutory support to it through Employment Guarantee Bill which was passed by the State Legislature in August, 1977. The bill has since received the assent of the President of India

Salient Features of the Act

(1) Under the Act, the District Collector is responsible for the implementation of the scheme in the respective district The District and Panchayat Samiti E G Committees are to supervise and review the implementation within their respective jurisdiction.

(2) Only productive works are to be taken up under the scheme and here again, the Collector will be responsible for the preparation of the blue print of works and manpower budget

(3) Registration of persons who volunteer to work shall be done at the headquarters of the Samiti or with the Gram Sevak or Talathi and the person asking for such employment will have to be provided with it in 15 days, on any work, within the Panchayat Samiti area as far as possible and in any case, not outside the district. If it is not possible for the authorities to provide work to him in his area, he can be assigned work outside the Panchayat Samiti area but within the district in consultation with the Collector

(4) If the Gram Sevak or the official concerned is not able to provide work within 15 days to the employment seeker, unemployment allowance at the rate to be fixed by the State Government but not less than Re 1/- per day will be paid. However, if the Government is unable to provide work owing to circumstances beyond human control, payment of this allowance wil not be obligatory on the government.

(5) The wages at the rate of Rs. 3/- per day which is minimum wage in rural areas (now it has been raised to Rs 4/- per day), will be paid. The payment has to be made once in a week but in any case, not later than a fortnight

(6) In the case of death or disablement of a person by accident, while on duty, an ex-gratia payment upto Rs 5,000/- will be made

Aims and Objectives

The aim of the Employment Guarantee Scheme is to provide gainful and productive employment, gainful to the individual and productive to the economy, in approved works to all able bodied and Adult unskilled persons in the rural areas, including the areas of 'C' Class Municipal Councils, who need work and are prepared to do manual labour but cannot find it on their own The guarantee of work is restricted to unskilled manual work The participant has no choice of work or the area of work. The guarantee is given at the district level but operationally work is provided at the Panchayat Samiti level The operation of the scheme has been so designed as to ensure that labour is deployed to the extent possible on existing construction activities in the area and care is taken to see that the EGS does not adversely affect agricultural operations and production and that the scheme is not activated where work is available on Plan and non-Plan works in progress In fact, the scheme is residual in the sense that full provision for Plan and non-Plan schemes should be made and expenditure on any work should not be incurred from EGS funds unless the budget provision is fully exhausted. Work is to be provided under the scheme within 15 days of receipt of a notice of demand for work. A fundamental objective of the scheme is that the works undertaken should result in the production of durable community assets and that wages paid to the workers should be linked with the quality and quantity of work output.

Nature of the Scheme

With the passage of the EGS Bill, the scheme which was in operation got statutory basis and the right to work of every citizen in the rural areas has been upheld though the employment is restricted to manual work only.

Under the scheme, only works which can be of help to create permanent assets to the community at large and productive in nature, will be taken up for implementation Thus, the labour intensive components of major and medium irrigation projects, minor irrigation works, percolation and storage tanks, soil conservation and land development work, drains and distributory canals, field channels, afforestation are undertaken Where such works are not available, construction of roads is also taken up

While selecting such works, only those in which the cost of unskilled component is more than 60 per cent of the total cost, are considered

The works are invariably executed departmentally and therefore, there is no intermediatory between

the Government and the labour Exception is made only when some skill is required for the speedy completion of project

The wages at the rate of minimum wages for agricultural labour in the State, is paid for seven hours of duty and it is linked with quality and quantity of the output of work by the labour. It is equal for both male and female worker. Only those who have completed 18 years of age, are considered, though children of the age group 15—18 are also considered if there is no other able-bodied member in the family The wages are paid partly in cash and partly in kind The payment in kind is roughly about 40 per cent of the cash component of the weekly wages It is paid in terms of wheat supplied under the Food for Work Programme, launched by the Government of India and the CARE Authorities

Works Programme Under EGS

The district collector is in overall charge of the scheme He accords sanction to the works suggested by the District Planning and Development Councils and is empowered to sanction works costing upto Rs 10 lakhs If any work costing more than this limit, is to be undertaken and the Collector has to obtain prior approval of the Government Only works which are technically feasible and financially viable are taken up under the EGS and technical and financial norms applicable to normal departmental works are also applicable to them At the site of the works, drinking water, sanitary arrangements medical help are provided and whenever the site is beyond 5 kms from the village arrangements for camping are to be made by the authorities The creches are provided for the children of working women

Organisational Set Up

EGS is executed by three-tier administrative set up. For effective liason and supervision, planning, direction, control and evaluation committees are set up at the State, District, Panchayat Samiti and taluka level

At the State level, the department of Planning is in overall charge of the programme, the Collector at the district level and the Tahsildar at the Panchayat Samiti level The Tahsildar has also been assigned the function of assessment of the demand for employment and deployment of employment seekers on different works under the execution of the Panchayat Samiti

The works programme is executed invariably departmentally and the works are implemented through agencies of several government departments such as soil conservation, PWD, irrigation forest, according to the jurisdiction of each agency Supporting administrative staff has been provided at the District as well as at the Panchayat Samiti level to help them in the performance of the functions assigned to them As far as execution is concerned, the programme is carried out through the normal staff of the departments

People's Participation

Provision has been made for people's participation in the framing and implementation of the works programme under the EGS It has been assured through a district employment guarantee committee and panchayat employment guarantee committee Th supervise and review the implementation of t scheme from time to time and suggest improvement In view of the interests shown by the State Legislature, a special committee was also appointed to g into the work of the EGS by visiting the works, holding discussions with the labourers and implementing officers The committee has so far submitted si reports and most of the recommendations have already been accepted by the Government. Besides, the evaluation of the scheme was assigned to the State Directorate of Economics and Statistics and the Programme Evaluation Organisation of the Planning Commission jointly to review the working of and benefits accrued from the scheme, in 1977 The evaluation report is now receiving the attention of the Government.

Suggestions for Improvement

The scheme has been a subject of discussion among the economists and social workers alike According to the analysis, made by the economists on expenditure-benefit (in terms of wages to the rural poor) basis, the per capita expenditure has been more than the per capita benefit (wages) earned by the workers There is need therefore, to improve this expenditure-benefit ratio and there is enough scope for the same becaus any economic activity, whether it is in the private or public sector, must be economically viable in the first instance.

Another drawback is that no real productive work has so far been undertaken. Works done under the scheme are productive indirectly in the sense that their completion will help food production and thus the community at large, will be benefited But in any given area there is limit to such works and when once those are completed It will be difficult to provide employment to rural people

The more effective way, therefore, is to bring Khadi and Village industries in the orbit of the scheme Because any economic activity to be productive, needs some amount of investment and though under the existing works programme of the EGS investment is made and the permanent assets are created it has its own limitations unless some productive schemes are taken up The whole scheme even now is being implemented on the model of the relief works and therefore, it is necessary to provide employment in agricultural and other ancillary rural industries under the Scheme

In that case, there will be need to modify it t include works other than manual work The following types of works can be suggested, Plantation of medicinal herbs and other trees, horticulture, dairying, spinning on Ambar charkha and weaving on improved looms, village ghanies, sericulture and plantation of flowering trees, soap making, match making etc which will provide avenues of permanent employment and the Government will not have to face difficulties in this respect

Progress in the Implementation of EGS

The expenditure incurred on the scheme since its inception and the mandays of employment generated is given as follows —

Table 1

Year	Expenditure incurred (Rs. in crore)	Mandays of employ-ment generated (Rs. in crore)
1972-73	1.88	0 45
1973-74	1 89	0 51
1974-75	13 72	4 81
1975-76	34 43	10 95
1976-77	49 88	13 32
1977-78	50 50 (estimated)	13 50 (estimated)
Expenditure upto 31-8-78	19 00	4 50

The maximum labour attendance on the Employment Guarantee Scheme works during 1977-78 was 6.20 lakhs, the minimum 2 32 lakh and the average 3.91 lakh

The pattern of expenditure on different categories of works for the period from 1974-75 to 1977-78 (till September 1977) are given below

Looking at the trend of expenditure as also the commitment of Government to provide employment the expenditure estimated on the scheme during the five year period from 1978-79 to 1982-83 and the mandays of employment likely to be generated are as under —

(in crores)

Year	Estimated expenditure	Generation of Mandays of Employment
1978-79	60 00	15 00
1979-80	65 00	16 25
1980-81	80 00	20 00
1981-82	85 00	21 45
1982-83	95 00	23 75
	385 00	96 45

Table 2

Sr. No.	Category of work	1974-75 Expdr. (Rs. in crores)	1974-75 Percentage to total expdr	1975-76 Expdr. (Rs. in crores)	1975-76 Percentage to total expenditure	1976-77 Expdr. (Rs in crore)	1976-77 Percnetage to total Expdr	1977-78 (Till Sept. Expdr (Rs. in crores)	1977-78 (Till Sept. Percentage to total expdr.
1.	Canals of major irrigation project	0 63	4.6	1 51	4 4	6 84	13 0	3 68	15.1
2.	Medium irrigation projects			0 57	1 7	1 12	2 2	1 35	5.5
3.	Minor Irrigation works (including percolation tanks).	10.04	73 2	15.85	46 0	18 31	36 7	9 08	37.3
4.	Soil Conservation (including Nala bunding)	1 56	11 4	7 02	20 4	9 74	19 5	4 34	17 8
5.	Land Development	0 11	0 8	3.56	10.3	4 89	9 8	2 70	11.1
6	Afforestation	0 37	2 7	0.95	2 8	2.34	4 7	0 91	3.8
7.	Roads	0 79	5.7	2.81	8 2	4 42	8 9	2 10	8.6
8.	Other Works	0 22	1.6	2 16	6 2	1 24	2 5	0 16	0.8
9.	Other Expenditure	—	—	—	—	1 34	2.7	—	—
	TOTAL	13 72	100.0	34.43	100 0	49 88	100 0	24 32	100 0

It will be seen from the above, that while selecting works under Employment Guarantee Scheme, top priority has been given to productive works like irrigation and land development and a very small percentage of expenditure is incurred on infrastructural development like roads

Delay The First

Space The Second

Stop The Third

Role of Employment Exchanges in India

Hasin Uddin
Department of Commerce,
A M U, Aligarh.

In developing economies the pre-requisite for the development of industrial labour is recruitment of permanent and stable labour force. If proper attention is not paid to the recruitment of labour force, naturally workers, employers and society as a whole suffer. In a developing country like ours the recruitment of industrial labour, usually made through the traditional methods like Jobbers, contract labour, badli system, employment at factory-gate and so on, causes a great dissatisfaction to workers, employers and society. This is due to various evils which are associated with these traditional methods of employment. For example in a jobber and contract labour system jobbers and contractors controlled both demand and supply of labour due to absence of direct employee-employer relation. In this case they look for their financial gains, both from the employers and employees and exploit both of them That is why bribery is a common factor in getting supply of labour and jobs for unemployed.

Shortage of Labour force

In developing countries in the early stage of industrialisation there is acute shortage of labour force because agriculture itself is able to absorb the surplus labour force. Apart from it some other factors like joint family system, caste system, bad urban atmosphere, lack of transport and landless labour also discourage the adequate labour supply to industries. Thus to overcome the problem of recruiting labour force, employers started taking the help of these intermediaries. This system continued to follow since labour market had shifted from village to town for jobs in factories due to rapid rise in population after 1921. Still there was no change in the method of recruiting labour force

This resulted in a higher rate of labour turnover and exploitation of workers by intermediaries but did not solve the employer's problems of getting specialised and trained personnel for their specialised jobs. Jobbers and contractors, mostly lacking in education and technique of scientific recruitment, could not be the right type of personnel officers. Untrained labour unaware of the working process in factories lead to the low production, increased labour cost and dissatisfaction among workers and employers In this way society also suffered because of higher prices and low quality products.

Contract Labour Act

Contract labour was abolished when contract labour (Regulation and Abolition) Act came into force from February 1971. This Act provides for registration of establishment, licensing of contractors and setting up of Advisory Boards. And so in some establishment method of direct recruitment was adopted and it was also free from the evils of jobbers and contract labour system. However in some establishments recruitment is done through their own personnel department. But there was not any such agency from where employer could get the labour of their choice and labour could come to know vacancies of their own capacities. So all the underdeveloped countries were facing the problem of recruitment of stable labour force In the light of above problems the importance of state run employment agencies was first recognised at Washington International Labour Conference in 1919 when it adopted the convention that "each member country shall establish a system of free public employment agencies under the control of a central authority." In 1947 at the 30th Session of Geneva International Labour Conference referred the matter to member countries for rectification. So in this way countries rectified it, including India and in 1947 this led to the adoption of a convention and recommendation by I.L.O. at the 31st Session of General Conference at San Francisco.

Employment Exchanges

In India employment exchanges were established in 1943-44 to meet the need of personnel for war. It was inspite of India's denouncement of its rectification in 1938 to I.L O convention of 1919 for setting up free public employment services. But since some employers' and workers' association and various committees have

favoured it, so employment exchanges were started in India. During 1943-44 these exchanges were run on voluntary basis and were meant for only technical personnel. But after war the problem of resettlement of the unemployed, unskilled and skilled workers and demobbed service personnel arose. So to fight this problem Government created a Directorate General of Resettlement and Employment, in 1945 for a period of 5 years. So under its control 69 employment exchanges, 173 information bureaux and 71 mobile exchanges were functioning by the end of 1946. In the beginning these exchanges were exclusively open for the demobbed service personnel and discharged war workers. But during 1947-48 their areas of activity were extended to cover every kind of job seekers. The life of Directorate General of Resettlement and Employment was extended upto 1952 and later on upto 1955

In November 1952 Government of India appointed Training and Employment Services Organization Committee under the Chairmanship of Sri B. Shiva Rao. The purpose of setting up this committee was to look after the future of Directorate General of Resettlement and Employment and expansion of employment exchanges in India. The committee submitted its reports and recommendations to Government in 1954. According to the recommendations of the Committee, administrative control of employment exchanges were transferred to state government from Central Government from 1st November 1956. This was also decided that the central government would concentrate on planning policies, standards, coordination and payment of 60 per cent of the cost of organization and 40 per cent cost should be borne by the concerned state itself. On the basis of the committee's recommendation, schemes were prepared and implemented. In the year 1958 a central committee on employment was constituted. Staff Training Bulletins were issued to guide the officers of employment and training organizations. The employment exchanges (Compulsory Notification of Vacancies) Act was passed in 1959, which came into force with effect from May 1, 1960. This act provides for the compulsory notification of certain categories of vacancies by employers to Employment Exchanges. Also, employers have to inform about the staff strength at regular intervals to employment exchanges. The following table indicates the role of employment exchanges between 1951 to 1976

From the table it **emerges that the** total employ exchanges in India **have increased** from 126 in to 582 in 1976—an over all **growth** of more 338 per cent. Similarly total number of persons re tered has risen from 1375 thousand in 1951 to 6 thousand in 1976 indicating a rise of 365 per c during the same period. Likewise the total number vacancies notified was 487 thousand in 1951 and 7 thousand in 1976 showing an increase of 55 per ce Similarly the total number of placement has increas by 46 per cent, from 417 thousand in 1951 to 6 thousand in 1976. But the share of vacancies notifi and placement has declined from 35.4 and 30.3 1951 to 11.8 and 9.5 per cent in 1976 respectively This leads to the conclusion that in absolute term there is a increase while in relative term there is dec line. The table further reveals that the percentage share of placement of vacancies to notified was always less in 1951 it was 30 to 35 per cent and in 1976 it was 9 to 11 per cent. This shows the inefficiency of employment exchanges in placement of vacancies against notified vacancies.

Problems and Prospects

It can not be ruled out that employment exchanges were facing various problems and difficulties. Most of the difficulties are self created or we can say that they are inherent to situation. However employment exchanges have been facing the following main difficulties :—

1. Employment exchange itself is not an employment generating agency. There is lack of employment opportunities, so it is not possible for the employment exchange to place the job seekers. This problem comes in the way of employment exchanges because there is slow growth of industries which creates employment and the number of unemployed is comparatively increasing so it is not possible for the employment exchanges to adjust the demand and supply of labour force

2. At present there exists unlimited supply of unskilled and semiskilled workers. But for these categories of workers employment opportunities are not sufficient. So employment exchanges are helpless to assist these categories of workers in getting jobs. Since there is shortage of professional and technical personnel, but employment exchanges were not capable of recruiting these personnel. So in this way the utility

Growth of Employment Exchanges From 1951 to 1976

Year	No of Employment Exchanges	Total No of persons registered (in '000)	Vacancies notified (in '000)	Percentage of vacancies notified, to registration	Placement (in '000)	Percentage of placement to registration	Applicants on live register (in '000)	Percentage of vacancies notified to placement
1951	126	1375	487	35 4	417	30 3	329	85 6
1956	143	1670	297	17.7	190	11 3	760	83 9
1961	325	3230	708	21 9	404	12.5	1833	57.0
1966	396	3871	852	22 0	507	13.0	2622	59 5
1971	437	5130	814	15.8	507	9 8	5100	62.2
1976	582	6385*	755	11.8	610*	9 5	5810*	80.7

*Projected figures

of employment exchanges is narrowed and the position of employment exchanges has been relegated to the secondary status in the field of organization of employment. So in this way employer does not bother for the recruitment of unskilled and clerical workers. And for skilled workers they advertise in news papers which helps them recruit personnel of their choice more effectively than through employment exchanges. This happens due to imbalances in labour market, the stagnation, defective education system etc.

3. Another problem, which is associated with employment exchanges is that they have to compete with the traditional methods of recruitment. However expectation from employment exchange that they will facilitate placement and recruitment impartially, has not been achieved, because still submission of applicants is made according to seniority in registration and not according to the merit of applicants. Again no aptitude test are conducted or used as tools of guidance for individual job seekers to look ahead about their future career. So more or less they act in the same manner as traditional agencies were recruiting labour.

4. Employment Exchanges also lack in the competency to recruite personnel, since technical and administrative capability of high order is required in utilising human resources effectively and economically. Here in India staff of employment exchange is not of high order and they themself do not take interest in planning and promoting the programmes of employment. So it will be useless to spend money on their training because it will not change their habit of laziness and carelessness.

5. Compulsory notification of vacancies by employer to employment exchange, has created further difficulty for them. On account of this rule employment exchanges also have became corrupt and bureaucratic in nature like other government organizations in India. So through employment exchanges also workers are exploited and all the evils of jobbers and contract labour are also present in employment exchanges such as bribery, favouritism, corruption and increase in higher labour cost etc.

To sum up we can point out that until and unless inherent difficulties are removed, employment exchanges can not work smoothly. So it is the duty of the planners to create more and more employment opportunity for the masses. Again education and demand for the particular category of labour should go side by side. The Government both the central and State, should also provide more funds for the development of employment exchanges so that they could be able to expand their activities to a larger extent. Further the State Government should pay added attention to their administrative functioning so that they could perform their duties more effectively and efficiently. □

Arun Plastic Industry

A Bold Enterprise

ARUN'S WORLD is no doubt a small world but it is unique and distinct at least in two respects. Although a cobbler, belonging to a Scheduled Caste, Arun Borkar has not only departed from his traditional vocation but has taken a bold step in carving out his career as a small entrepreneur. Second, unlike many of his friends who prefer to remain content with the meagre source of livelihood rather than struggle and run the risk of treading a new path for improving ones lot, he has set an ideal example in being bold enough to come out of his age-old groove by choosing to cover an altogether new ground

This is his story in his own words :—

"My name is Arun Vitthalrao Borkar. I am 27. I am living in Kailash Nagar, Mochi Pura at Nagpur in a 2m x 3.5m tenement and belong to a cobbler's family Being the eldest son of my father I had often to shoulder the financial responsibility regarding marrying off my sisters. I have 2 brothers and 4 sisters and have been working as a worker in the plastic industry since last 8 to 10 years. The skill acquired during this period was my only capital.

"Realising my difficulty that it would be almost impossible for me to get loan and other assistance without which I could hardly convert my dream of becoming an independent entrepreneur into reality, I approached the Small Industries Service Institute (SISI), Nagpur working under the Union Ministry of Industries which rendered me not only the blue print for my project but also in securing loan from Bank of Maharashtra, Wardhmannagar, Nagpur to the extent of Rs 1,500.00

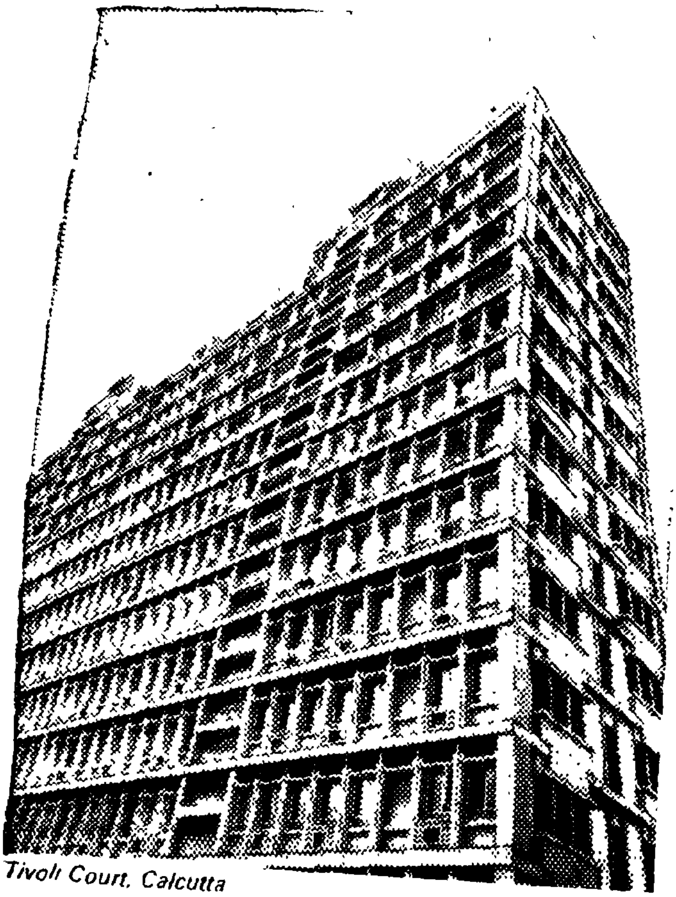
"The Bank immediately considered my case and quickly extended all the assistance I needed. It is about a year since I gave up my job and set up my own unit. Today I have one Injection Moulding Machine which cost me Rs. 850 and three dies costing about Rs. 1600 with which I manufacture jewellery boxes. My unit consume about 100 kg. of polysteren powder p.m. and function as an ancillary. But being encouraged by the invaluable assistance, guidance and loan facilities etc. through the SISI, I now function independently.

"I have already repaid the entire loan taken from the Bank. I am now preparing to expand the capacity of the unit by purchasing an additional Machine and five more dies for which the Bank is extending its helping hand with additional financial assistance. Instead of operating through middle-men I also intend to handle marketing of my products independently and directly as this would enable me to earn the entire profit which I could plough back in my enterprise.

"With the additional machine I shall be able to turn out 700 boxes per day and would earn a net profit of Rs. 1200 p m.

When asked about the difficulties encountered by him Arun said, "I am a married person now. Willy-nilly I am managing in this very small tenement and I need bigger space for expanding my unit." Referring to the rate of interest charged by the Bank he said "the financial burden of enterprising and skilled workers like me would be greatly reduced if the rate of interest is brought down to 4 to 5 per cent instead of 11 to 13 per cent as is the case now."

He added, "But for the helping hand of SISI and its counselling I could never have been an independent self-employed man with greater confidence than even before regarding my future." □



Tivoli Court, Calcutta



A Crash Programme for Employment

Shiva Chandra Jha,

Member of Parliament

It goes without saying that unemployment is an acute problem in India. In fact its acuteness goes on increasing as time passes. Thus in order to tackle this problem seriously it is imperative to embark on some crash programme at once. My suggestion is that despite all that is being done for solving the unemployment problem a crash programme for employing at least one thousand persons per block in hard and soft manual works be started at once in the country.

But before coming to this suggestion it is necessary to look at this problem historically.

Product of Capitalism

Unemployment is basically a product of capitalism. Wherever there is capitalism in the world unemployment is dogging it. There can be no capitalism if there is no unemployment. One is inseparable from another—be it in the United States, or in UK or in France, or in any other country where there is capitalism.

It was not so before capitalism came into being in the history of mankind. Under feudalism there was no unemployment. All were somehow or other attached to land to live on. There was exploitation, oppression but there was no unemployment problem [illegible] sense it is felt at present. Before feudalism [illegible] was the situation under slavery. A slave [illegible]altreated in every sense of the term but he had [illegible] guaranteed means of subsistence no matter how [illegible] it was.

It was only when the producers were deprived of all the ownership of the means of production and they had no other wayout for making a living but by selling their labour power that unemployment in its stark nakedness came into the picture. It means that when such a class bereft of all ownership of the means of production on one side and another class which possessed the requisite capital to employ them came into the picture, the unemployment problem started. Thus, unemployment is the progeny of capitalism.

Now, in India as it is capitalism prevailing, unemployment is the concomitant part of it. And as capitalism has been developing from one five year plan to another five year plan unemployment too has been increasing with it. And now at the stage of the Sixth Five Year Plan it is too glaring in its acute form. Nay, it is assuming an explosive form. No doubt, the five year plans after independence have been presented before the country in very attractive garbs like the "socialist pattern of society", etc., but the reality that has been unfolding under it is nothing but capitalism, growing capitalism with all its growing salient features, in no way qualitatively different from capitalism in any other country, be it UK or the USA.

Extent of Unemployment

The Sixth Five Year Plan (1978—83) under the Janata Government has been started with all these heritages. The *Draft Sixth Five Year Plan* (1978—83) has thus summed up the magnitude of the problem.

"Unemployment in March 1978....... 20.6 *million persons* : *16.5 million in rural areas and* 4.5 *million in the urban areas.* These are clearly the most inclusive and significant indication of the magnitude of unemployment in 1978."

But before we come to this conclusion it should be remembered that when the Draft of the First Five Year Plan was made the problem of unemployment got ignored. It was on the pointing out by Asoka Mehta and others a separate chapter on unemployment got added. And since then the problem of unemployment has been duly considered as part of the overall planning in the country. And since the First Plan, the picture of employment and backlog of unemployed that Six Plan inherited has been like this :

	Back-log	New Entrants	(million) Additional Employment	Gap
First Plan	3.3	9.0	7.0	5.3
Second Plan	5.3	11.8	10.0	7.1
Third Plan	7.1	17.0	14.5	9.6
Fourth Plan	13.6	27.3	18.0	22.9
Sixth Plan	20.6	29.5	49.2	0.9

(*including the backlog of 4 million at the end of 1968-69. Data for the Fifth Plan are not available).

This table demonstrates that despite the thorough and complete implementation of the Sixth Five Year Plan, the people are going to be unemployed. It means that the unemployment is to remain unsolved even at the end of the Sixth Five Year Plan. Then there are the breakups of the educated unemployed and the female unemployed. According to a reply given in the Rajya Sabha on May 5, 1978, the total educated unemployed in the country are more than 57 lakh, out of which the matriculates are 45-46 lakhs, the graduates and the post-graduates 11-12 lakhs, the engineering degree and diploma holders are about 93-94 thousand and so on. On the live register of the employment exchanges at the end of 1977 in the country the total number was more than a lakh persons (Reply in the Lok Sabha on July 20, 1978). Then there are the figures of unemployment among the females and the percentages of the unemployed among the states.

All these data just highlight the alarming magnitude of the unemployment problem in India. To this if the figures of the people below the poverty line is taken into consideration, this problem becomes much more alarming. The Prime Minister Morarji Desai replied in the **Rajya Sabha on Nov. 23, 19** people below the poverty line in India are cent, out of which 47.71 per cent are in the while 40.71 per cent are in the urban . problem of poverty is basically interlinke problem of unemployment.

Thus, the problem of unemployment n tackled seriously. To say that the un problem would be solved in ten years is recognize that this problem is not going t for ten years and, second even if it is ac the ten-year period is not a long period, data indicate that it is going to remain un at the end of the Sixth Plan In such a is imperative to embark on some crash pro employment.

A Crash Programme

My suggestion is that a crash programme ploying at least one thousand persons pe the country for hard and soft manual works at once Such a crash programme for easing t ployment problem was started by the U.S. Franklin D. Roosvelt in the thirties when the Civilian Conservation Crops programme i New Deal Policy Such a crash programme started in India too and it won't be too ex

In India there are 5004 Blocks. At the r 1000 persons per Block, 50,04,000 persons pe would be given employment in hard and soft works. That is about 50 lakhs of persons wo employed in the country at once And if they be paid Rs. 200 per month, it would cost Rs crore per year This is not a big amount when the context that the total outlay in the public in the Sixth Plan which is going to be to the t Rs. 69,380 crore, and for the annual Pla 1978-79 the total outlay planned by the Rs. 5,' crore out of Rs 11,1624.45 crore for all Indi view of this expenditure for the annual Plan for 19 the amount of Rs. 1,200 crore is not a big amou with the present ways of mobilizing resources there are other avenues from where resources c tapped. If income ceiling in the ratio of 1 : strictly applied Dr Rammanohar Lohia had est that Rs 1000 crore per year would be availa the Government. Besides, conspicuous consu in the country has been estimated by the econ to be of Rs. 500 crore per year. This can be st with all strictness. Then the tax evasion of Rs. 300 crore per year as pointed out by the Kaldar i if it is stopped and mobilized it would be av to the Government. Then there is the hoarded and other reservoirs from which resources ca mobilized. Thus it is not impossible to m Rs. 1800—2000 crores if some clearcut polic due firmness is applied

So for easing the unemployment if a crash prc me for employing at least one thousand person Block is started, the requisite amount of Rs. crore per year would not be impossible to get.

It just requires some clear thinking and to do. □

Information System for Education Planning

Dr. J. D Sethi,
Member, Planning Commission

THE IMPORTANCE of making reasonably accurate projections for purposes of planning hardly needs to be emphasised. Proper planning cannot be undertaken unless reasonably reliable data regarding the present status is available. Only on the basis of this data, desired analysis can be carried out with regard to projections for the medium term and long term perspective planning. This is most certainly a complicated task

Planning, as is well known, is a complex process. It involves a number of steps such as the specifying of objectives, developing a time-frame for their realisation, making an inventory of resources, identifying alternative strategies to reach goals, making optimum use of resource, formulating concrete programmes for implementation, monitoring their progress and finally the evaluation of programmes to indicate the extent to which intended benefits have accrued to intended groups. In each of these processes, one has to depend upon information, both statistical and non-statistical. To undertake meaningful exercises in respect of each of the above processes, information must be accurate and reliable and must become available in time.

Information becomes even more important for programming. After the objectives have been laid down and their hierarchy in terms of priorities determined, concrete programmes and concomitant organisational patterns have to be worked out to ensure the full realisation of plan goal. Important questions, like how much can and should be achieved, who will benefit, what human material and organisational resources will be required, who will assume responsibility for what, where should an activity be initiated so as to maximize returns from investments etc all these need accurate and timely information to settle

Use of Statistical Methods

Regarding methods for projecting School enrolment, the main focus will be on (a) getting the demographic data regarding school enrolment, attendance, etc. and (b) developing certain criteria and using statistical methods to arrive at projection figures. This aspect of educational planning have quite a few hazards when it comes to making projections .

(i) The demographic data in itself is usually of a questionable nature.

(ii) The enrolment figures as well as the attendance figures as they are reported by the school staff are usually inflated.

(iii) True reasons for the drop-outs from the school system remain unindentified. Because of the very complex socio-economic and cultural character of society, these cannot be culled from the returns produced by the school staff

(iv) We do not get an idea of the different socio-economic groups affected by the school system, particularly the weaker sections, the minorities, scheduled castes, scheduled tribes, etc

Setting Up a Monitoring System

Steps have already been taken to institute at a national level a monitoring system for education. Initially, we will attempt to obtain from different levels data regarding two parameters , (a) enrolment and (b) attendance. The system as envisaged at present is as follows :

(i) For adult education, data regarding projects will be sent in an agreed proforma direct to INFORMATICS (computer system installed by the Department of Electronics).

(ii) For the elementary schools the reporting will be from block level direct to INFORMATICS system.

(iii) The State and district level proforma will be independently organised by the State Governments.

Need for New Approach

Apart from demographic and statistical techniques, it is also necessary to pay some attention to the whole area of checking these figures through an appropriate monitoring system, continuous re-modelling, evaluation and projection techniques. These can be dealt with in four parts

(i) The mechanism which is being set up for a monitoring system.

(ii) Then comes the formation of a National Data Bank and Information System for educational purposes.

(iii) Some more in-depth techniques required to get a complete picture.

(iv) And finally, the basis on which the above projections can be made.

Monitoring

As stated earlier that for certain parameters we are setting up a national monitoring system using the INFORMATICS software. Data information of enrolment and attendance, thus available will only provide us gross indicators. This is, however, the first step in this direction. Monitoring of educational programme must become an important aspect of educational planning. The implementation of programme in

Extracts from an address delivered at the National ...ining Seminar on Methods for projecting School ...olment organised by the National Staff College for ...cational Planners and Administrators.

intended directions often requires corrective action; this not only prevents distortions but also helps in removing bottlenecks which may be hampering the progress of a programme. It, therefore, the implementation of programme is to be ensured, an adequate monitoring system must be developed as an essential ingredient of the planning mechanism. A great weakness of our planning system, particularly in the field of education, has been the absence of a well-articulated system of watching over the implementation of various programmes with the result that timely information about how a programme is progressing is not available at a time when speedy action could be taken to improve the chances of its implementation. This lacuna is being remedied in respect of high priority educational programmes proposed in the Plan for 1978—83.

It is obvious that over a period of time this monitoring process will enable us to create a sizeable data bank of educational information. Such kind of information is a pre-requisite to any planning in the educational area.

Evaluation and Model building

The above exercises, however, still do not give us access to process insights. For this purpose, it is essential that by adequate sampling measures a few indepth evaluation exercises be undertaken so that we get a longitudinal dimension of the problems in this area. Setting up of evaluation exercises therefore, are to be a complementary process to the large system of monitoring.

Finally, the core of the problem is how on the basis of the above information, both longitudinal and latitudinal, model building exercise can be undertaken which would lead to the building of a predictive model. This is the challenge which the educational planners and others will have to meet in the days to come.

Suggestions for Improvement

An elaborate system of collecting education statistics has already been built and considering the number of items on which information is collected each year for a large number of institutions, the effect involved is definitely stupendous. The system of collecting and compiling educational statistics, however, leaves much to be desired. This may be partly because of the large number of institutions involved and much more so because the strengthening of the statistical machinery has not been commensurate with increase in the workload.

The system needs significant change and improvement. A number of improvements have already been initiated. The rationalisation of forms, undertaken in pursuance of the recommendations of the Planning Commission's Expert Committee on Educational Statistics, which rightly recognised that substantial proportion of the information need not be collected annually or on a census basis, is one such improvement which has already been effected. This should considerably speed up the collection, compilation and timely publication of educational statistics. At the request of the Planning Commission, the Ministry of Education and Social Welfare has also constituted an expert group on monitoring of educational programme. Such programmes, the monitoring of which should be taken in the first instance have been identified, some preliminary work in regard to the preparation of schedules has also been initiated. The report of the Group to indicate the administrative structure of the monitoring information system that needs to be built at various levels is awaited. The Annual Plan for 1978-79 of the Education Ministry also contains financial provisions for assisting the States to strengthen their machinery for educational planning and statistics. It is understood a scheme is being formulated for the purpose.

The need for creating a single agency for the closely-linked functions of planning, monitoring, statistics and evaluation has been emphasised by the Expert group on monitoring. This is a recommendation which the Planning Commission's Task Force on Machinery for Educational Planning and Administration had also made at the time when the Fifth Five-Year Plan was being formulated. This is a suggestion which requires careful consideration. Such an integrated system should ensure that information which is gathered is with a purpose and helpful in improving planning and implementation of educational programmes.

Decentralisation of Plan Formulation

The establishment and strengthening of the machinery for planning, monitoring statistics and evaluation will not remain confined only to Central and State headquarters. We have to think increasingly of decentralising plan formulation. It is at the specific area levels that information must become available for taking decisions. In this context the emphasis on developing district or block as the basic unit for planning needs to be kept in view. In education particularly, the district and block level machinery for decision making would need to be strengthened to develop in local officials competence to generate and utilize information. This will require considerable inputs of training.

The creation of suitable administrative machinery, while necessary, need not be the only method for generating useful and relevant information. In fact, there may be disadvantages in entrusting official machinery with responsibility to generate information. For one thing, bureaucratic arrangements tend to routinize operations and often find considerable difficulty in dealing with problems which cannot be solved on the basis of precedents. Secondly, the creation of administrative arrangements for compiling information, which can be gathered through other means, leads to permanent financial commitments. And finally the most important disadvantage is that official machinery tends to gloss over failures, hiding facts which makes realistic planning difficult. In view of these and other such disadvantages it would be useful to think of alternative methods. It may, for instance, be worthwhile to develop a system of supporting studies and surveys by competent individuals and organisations. The fellowships programme of the University Grants Commission, the ICSR, the NCERT and other such organisations can also be utilised for generating information useful for educational planning.

As already pointed out, educational planning cannot be undertaken by using educational statistics alone. Educational decisions quite often require data generated by other organisations and institutions. Take for instance the data on population and its composition which are essential for determining educational facilities that would need to be created. Similarly, the data on requirements and utilization of manpower help to regulate the intake of institutions of higher learning, particularly those engaged in the preparation of professional manpower. Surveys determining skill needs of

emerging occupations can help to bring about meaningful changes in the curricula of educational institutions and suitable modifications in training programmes. Since information needed for educational planning has to be multi-dimensional and cannot be generated by educational authorities for want of expertise, it is necessary to develop collaborative arrangements with other organisations and institutions. This would be more useful than to create additional arrangements for new data that are required.

Educational Statistics and Research

Educational statistics must be such as to help in the process of educational research. It is often claimed that Indian educational statistics are highly streamlined for research. But even if this claim is accepted, it seems to have ignored a vital aspect of research. This claim does not have a strong basis. Education is a practical and applied activity and gets its idea both from the contemporary social problems as well as from various other disciplines such as sociology, philosophy, history, psychology, etc. Now it is also being influenced by highly developed and pervasive technology of mass media It is obvious that relevant statistical information must throw light on the status of education in relation to other disciplines Neglect of other fields may have large consequences for education We may thus need not only specific but more integrated information

Role of Teacher

The statistics prepared by school teachers remain unreliable This may amount to denigrating the teacher. There is no such intention however to do so. But the status of the teacher has been so lowered that he is either completely alienated from the system or has become a part of the educational bureaucracy. Our experience tells us that in India the relation between the bureaucracy and the client is one of negative reciprocity. Therefore our education system must give proper place to our teachers This is easier said than done

The only way in the current dispensation is to mutually involve the local community and the teacher with one another. The concept of area planning assumes the involvement of the community. Indeed area planning like earlier schemes of Community Development will fail if the community is not ac volved. A passive teacher is a poor instru anything and everything. An active teache must remain our final hope. Indeed, if he and the community is responsive to him, we able to discard a lot of steps in the informatio suggested earlier A good active teacher in analysis is the best statistical tool.

Collection of information on any subject to be accepted as a part of a general soci knowledge The statistical information, if it collected, must have its starting point some br cial objective followed by a social analysis might be capable of generating and testing tional and casual hypothesis. In other words, co of statistics must be considered as some kind of a discipline which brings out major determinant in transformation Its methodology must relate field of application of theory and methods pert to a given social discipline For example, the most important factors that have a bearing on education system are (1) demographic pressure, (2) the explosion of aspiration about educational at ments, which of course is different from explosio knowledge. As far as the collection of statistic this country is concerned whether the subject is tech logy or education or non-education the bureauc assumes the role of primary carriers of this task have to change the methodology.

It is claimed on behalf of our educational syst that it is both meritocratic and democratic. It appe to be a dubious thesis, but at least this has been th intention of those who have been responsible f running this system The question that we have ask ourselves is whether the information, monitori and evaluation of the educational system throw ligh on this claim or on its repudiation. If one goes b quantitative aspects of our education, one may fe justified in making this claim. But when it comes its qualitative aspects, there are serious doubts abo this thesis More significantly, there is a danger th when put in juxtaposition to the wider problems the society, even most sophisticatedly collected stat tics may create a dangerous illusion. I strongly r commend that this institution should undertake a cou rse in sociology of knowledge for those who are bei trained for collecting educational statistics □

Small Entrepreneurs Initiative

SHRI JAMUNA JAIN of Lopchu was a small grocery shop-owner and found his life in tight corner with the income he earned from the shop He consulted many to start a profitable industry It was the proper advice given by an expert of dairy development helped him to take up a small dairy industry in the remote village at Lopchu on Darjeeling-Kalimpong Road.

With only Rs. 2000 which he had, he purchased equipments meant for cream separator, lollipop disc and some other allied small implements and started his small industry. Slowly his brothers, sisters and aged mother joined with him and the Amar small industry became the family affair. All the members became expert in producing and selling the butt dry cheese and peda—all made of milk The passersb of his shop also enjoyed the milk products.

Consequent to this, Shri Jamuna Jain is purchas the milk of many small farmers in the surroundin five villages.

Today his monthly turn-over is six thousand rupee More than five local youths have been employed. Th small entrepreneur's initiative in the rural area Lopchu on Darjeeling and Kalimpong Road gener ated not only employment but helped many farmer in the surrounding villages.

—F. P.O., Kalimp

Technology And Development

Sampath S. Iyengar
ICICI
Bombay

SCIENCE AND TECHNOLOGY have been the main instruments which have created the present industrial civilisation and the continued use of technology is a central factor in increasing the capacity to produce more. The role of technology in contributing to economic growth is specifically brought out for the United States by Edward Dennison, and for India, by Bakul Dholakia in "The Sources of Economic Growth in India". The studies by these authors bring out the important point that application of advances in knowledge (technology) contribute to over 15 per cent of the growth rate. The principal problem in India is to raise productivity and growth by a progressive improvement in the productive power of the existing as well as new sectors of the economy through technological changes. Since the Second Plan, introduction of technical knowledge through technical collaboration agreements, both in the public and private sectors, has been an active element in the country's industrial strategy. There has been a slackening in the industrial growth rate since the mid sixties This has to some extent been accompanied by a decline in the number of foreign collaboration agreements This raises the question as to whether the slowing down of technology import has led to a decline in the industrial growth. Along with this there is the feeling that cost of import of technology has been high There have also been questions relating to the method of importing technology. The following sections, besides, tracing the growth of policy, in regard to technology. attend to the above issues

Transmission of Technology

Technology could either be developed internally or acquired from outside It is true that getting technology from outside could, to some extent, dampen local initiative and self reliance in the long run and result in outgo of foreign exchange. But this has to be balanced by the fact that the internal evolutionary process has this drawback that it is likely to be repetitive and costly, and more important, time consuming. Indigenous technology where available should be used But there is little merit in expanding efforts at developing technologies readily available at reasonable prices on account of the opportunity costs entailed In the Indian context, although considerable technical know-how is now available within the country, there is still need for inflow of technology in research-based industries particularly electronics and petrochemicals as also in new and sophisticated bulk drugs for upgrading of older industries such as machine tools Thus, the lingering element of mistrust towards the inflow of foreign technology would have to be got over

Technology is embodied in products, and there are three ways of introducing it from outside into an economy (1) by setting up foreign-owned firms in the country, (2) by setting up joint ventures, and (3) by setting up Indian firms and buying only know-how from outside The choice of the methods of transfer of technology is a complex one depending as it does on the supply of capital and availability of competent local entrepreneurial groups. Also, the device may vary from one group of industries to another depending on the state of maturity or stability of the industrial process

In the initial phase of industrialisation, the first form is preferred. Here most of the arrangements for the transfer of technology are implicit. Generally the technology supplier would prefer a controlled subsidiary as it is the most remunerative; operations can be more uninhibited and also to avoid the risk of leakage of new advanced technology. The chief drawbacks of this method are that it results in a large outgo of foreign exchange and such firms have proved reluctant to impart their skills and much of their know-how to local personnel In India the importance of this form of transfer of technology started declining towards the sixties when manufacturing received attention and the economy had developed sufficiently. Increasing resort was made to joint ventures. This form of organisation has its intrinsic advantage arising from economies in or sharing of risks, financial resources, management and personnel and corporate know-how.

The foreign collaborator could count on the Indian partner to handle local problems, better known to local firms, and to mobilise domestic resources. To the Indian partner the advantage stems from the fact that the collaborator would bring in foreign exchange, acquire the brand name, be involved in the project and have continuing access to knowledge. Many of the benefits of technology arise from a package, from management and control right from the different stages of production to marketing and distribution.

Importing technology via joint ventures however has its drawbacks in so far as it involves some outgo of foreign exchange, secrecy clauses, control of the venture, use to which the techniques imported are put and limitations on the range of production processes to be manufactured or used.

To get over many of these problems, and given that the economy has attained a measure of self reliance and has the requisite scientific manpower, an economy could resort to buying know-how. This is possible as the application of results can be detached and used independently because basic know-how is almost entirely embodied in fixed equipment. Also, there is a willingness to supply technology without investment. But such arrangements are not always advantageous;

8 DPD/78—11

takes the risk and one does not have conti-[illegible]ess to knowledge or the benefits of subse-[illegible] research.

The three forms of importing technology, thus have their merits and demerits. In the ultimate analysis the economy must have arrangements for all forms and combinations as the availability of know-how is function of time and the capacity and need of an economy varies over time and with different industries. Besides, provision has to be made for the fact that advances in science and technology are accompanied by rapid obsolescence of existing systems. In high technology areas especially those which are newly tested and which are monopolies, it might be necessary to have branches or 100 per cent controlled subsidiaries. In case of technologies which are competitively available but have uncertainties, where there is need for continuous inflow of know-how and where the receiving economy has some measure of industrialisation the joint venture might seem appropriate. The Indian experience has shown that a mutually beneficial role is possible, especially where the local partner has the absorptive capacity to benefit from foreign collaboration. Tata Engineering and Locomotive Company provides one such example. Technologies which are commonly available and where the receiving country has some degree of industrial maturity, outright purchase could be considered. The Indian economy at this stage has attained a degree of industrial maturity coupled with growing R and D efforts. At the same time the international market for know-how in many areas has become competitive. The economy can thus exercise options with regard to the import of technology.

Developments in Policy

In the light of the foregoing elaboration of the methods of transfer of technology it would be useful to review developments in policy. In the pre-independence period there was no specific policy towards technology. Foreign investment (along with technology) took the form of branches or wholly-owned subsidiaries. Local entrepreneurs set up units in industries such as textiles, cement, paper and sugar without foreign collaboration or in the case of Tata Iron and Steel, obtained the services of foreign consultants. There was, therefore, a need to define policy. The first step in this direction was the Industrial Policy Resolution of 1948 which recognised that participation of foreign capital, particularly as regards industrial techniques and knowledge, would be of value for rapid industrialisation. The resolution did indicate that foreign investment would be regulated and that control would have to be in Indian hands although it did not exactly specify the role of foreign investment. This was done in the foreign investment statement of April 1949 which recognised the greater need for foreign capital. In the statement itself there was no explicit reference to the import of technology. However, within the overall [illegible]ework, Government adopted a liberal attitude in [illegible]coming know-how. In the period following, that is [illegible] 1958 (the entire First Plan period), industrial acti-[illegible] was in its infancy, the foreign exchange position [illegible] easy and foreign collaborators were asked to [illegible]g in only a limited amount of money. However, [illegible] response of foreign firms was poor and there were [illegible]ly 50 collaboration approvals a year.

[illegible]he economic scene changed in 1958 with the laun-[illegible]f the Second Five Year Plan which envisaged a massive step-up in the industrialisation programme. The manufacturing sector was to make rapid advances into various technology-intensive fields producing capital goods, intermediate products and fairly sophisticated consumer goods. The development of these new industries was contingent on the availability of technological processes and know-how and recourse to foreign collaboration was necessary to bridge the gap in indigenous know-how. During the latter period a foreign exchange crisis developed, to meet this situation foreign capital participation gained acceptance. Government encouraged joint ventures between foreign and Indian firms but insisted that foreign collaboration could cover all foreign exchange costs of the project and that prospective investors should not repatriate their capital for ten years. Foreign entrepreneurs took to equity participation to provide the foreign exchange component for the import of machinery and equipment. The initial good experience of working with foreign investors, favourable impact of foreign private investment and the greater need for foreign capital in some industries encouraged Government to take steps towards liberalisation of its foreign investment policy. A significant step was to allow majority ownership in some industries and to relax controls for the import of components, spare parts and raw material for some priority industries. As a further incentive, Government allowed private sector investment in items in the reserved list of the Industrial Policy resolution of 1956. For example, although fertiliser was in the 'B' list of the 1956 resolution, policy was modified to meet the special requirements of the industry. Similar was the case with heavy plant and machinery/machine tools and aluminium, to illustrate a few.

All the above measures of attracting foreign capital and know-how coupled with the fact that the Indian private sector had by now grown in size and confidence and had become used to dealing with foreign firms and to calling on their resources had a favourable impact. At this stage the attraction of a sheltered market as a result of stringent import control necessitated by the foreign exchange position provided additional incentives to foreign investors. There was a sizeable upsurge in the number of collaboration agreements. Technology on a wide scale was imbibed in industries such as basic chemicals, industrial machinery, metal products, electrical machinery, drugs, fertilisers, machine tools, synthetic rubber, tyres and tubes and others.

The liberal policy continued till 1970. Later, the policy became relatively selective on account of the emergence of a diversified industrial base, growing self-reliance and the knowledge gained from actual experience. Greater selectivity was exercised in the matter of approval of foreign collaboration applications with a view to avoiding repetitive import of technology, restriction on exports and permission for know-how to be passed on to another Indian company. In July 1970, the Government issued a list of 121 items in which foreign collaboration was to be permitted for bridging technological gaps. Also, the Industrial Policy resolution in the same year permitted foreign collaboration even with majority participation if this involved sophisticated technology or was export promoting. In 1973 the policy was again modified in the context of changes in the industrial licensing policy aimed at integrating foreign technical collaboration with the overall economic objective of self reliance. Foreign participation had to be justified as being con-

to import substitution or export promotion. A ceiling of 40 per cent in foreign equity participation was imposed on both new and existing units. In May 1978, the Government published a revised list of areas ineligible for technical collaboration.

To sum up, the policy during the last three decades has passed through various phases. In the first phase, financial and technical collaboration agreements were permitted on a liberal scale; this phase began in the mid-fifties and continued through the early sixties. With a measure of industrialisation being achieved and progress being made in the development of indigenous technology the policy became more selective, financial participation being brought down to 40 per cent and technical collaboration agreements being permitted only where indigenous technology is not available and for export promotion. In essential, the present policy boils down to . (1) where Indian technology is available it should be preferred . (2) where not available, it should be acquired at lowest cost ; (3) once imported, its use must be preferred to import of similar technology.

Main Terms and Conditions

The Government classifies industries into three groups : those in which only technical collaboration is permitted, those in which both technical collaboration and foreign investment is permitted and those in which neither is permitted. The agreements should place no restrictions on exports and permit the licence to be used by another Indian party; also, these agreements should place no other restrictions such as import of plant and machinery, raw material etc on the Indian company.

Payments could be either as technical fees or as royalties, royalties could again be either in cash or equity participation. Also, it could be as equity participation cum technical fees. Technical collaboration agreements are considered on recurring royalty payments which are taxable. These rates are related to net sales. The permitted royalty rate (depending on the nature of the technology) generally is 3 per cent and does not exceed 5 per cent, the higher rate being mostly applicable for industrial machinery, cutting tools and industrial sewing machines. Royalty rates nearer 5 per cent are agreed to depending on a number of factors such as essential nature of the item, degree of sophistication of technology and exports. The rates are generally lower in case of majority participation. Lumpsum payments are also considered for the import of drawings, documentation and other forms of know-how. In deciding the reasonableness of such payments, lumpsum and recurring royalty would have to be an acceptable proportion of value of production. The lumpsum payment should be phased out into three equal instalments to be paid respectively when taking the agreement on record, on transfer of documentation and on commencement of production.

Technical collaboration agreements are for 5 years from commencement of production or 8 years from signing of agreement. Extensions of collaboration agreements are not viewed favourably except in those cases where the time period has proved insufficient for absorption of the technology or for exports. If technical collaboration agreement is permitted along with foreign share capital, this capital should preferably be brought in by way of inward cash remittances without linking it up to import of plant and machinery and equipment.

It must be mentioned that these are the main terms and that Government has taken a very pragmatic view wherever liberalisation is justified and each case is decided on its own merit.

Working of the Agreement

Details of collaboration agreements are presented in tables I to V. The agreements cover a wide spectrum of industries (table III) and countries (table IV).

TABLE 1

Foreign Collaboration Cases

	APPLICATIONS		
Years	Received	Approvals	Rejections.
1	2	3	4
1970 .	429	183	197
1971 . . .	456	245	161
1972 .	511	257	200
1973	500	265	213
1974	517	352	233
1975	439	244	139
1976 .	450	282	101
1977 .	427	242	67

In recent years there have been about 250 collaboration agreements a year. The major areas where approvals have been granted are electrical equipment, industrial machinery, chemicals and transportation. Collaboration agreements have played a significant role in considerably diversifying and widening India's industrial structure and bridging the technological gap between India and advanced countries. To quote one example, the drugs industry has been able to grow rapidly (12 to 15 per cent per annum) in terms of production and exports, mainly because India had in the fifties the advantage of attracting foreign know-how. As Michael Kidron has put it, "much of the dynamism of private industry can be traced directly to the increasing number of collaboration agreements since 1957". The same could also be said of the public sector as most of the major units set up such as Bharat Heavy Electricals or the major steel plants, to quote a few, involved foreign technical collaboration.

Starting off with collaboration agreements mainly with the UK and in industries such as plantations, petroleum refining and services, agreements have now been concluded with a number of other countries also such as the U.S., Germany, France, Sweden, Japan, Switzerland, Italy and others and a variety of industries such as machine tools, machinery manufacture, electrical goods and chemicals. Industries in products such as automobiles, motorcycles, telephones, diesel engines, electrical machinery, dyestuffs, vitamins, fertilizers, tractors, cables, aircraft, jute and textile machinery, railway coaches, chemicals, plastics, glass, artificial fibres, insulated cables, switchgear equipment, tyres and tubes, refractories and others have been set up over the last 20 years with the help of foreign collaboration getting in the process the benefit of know-how from internationally known names such as Guest Keen Williams, ICI, Crompton, Vickers and Babcock, English Electric, Leyland, Enfield, Cummins, Dunlop,

[illegible] Nestles, Ciba, La Rocho, Geigy, Sandoz, [illegible] Innocenti, Piaggio, Montecatini, Fiat, Ceat, [illegible]o, Facit, Atla, Copco, Vulcan Laval, Dun[illegible] Carbide and Parke Davis.

[illegible] of the working of the collaboration agree[illegible]als that the bulk of these agreements are [illegible]nical. In line with Government policy, [illegible], there has been a sharp fall in the number [illegible]ration cases involving foreign capital parti[illegible] On an average, between 1965 and September 1977, only about 20 per cent of the cases approved involved foreign capital participation.

Over 60 per cent of all collaboration agreements are in the engineering and electrical equipment sectors and around 11 per cent in chemicals. In the late fifties and early sixties there might have been agreements in some of the sectors referred to as "inessential" such as soaps or soft drinks but with the passage of time such agreements have dropped out of the economic scene. In recent years most of the agreements have been in areas where technology is essential and where technological changes are rapid. While discussing the problem of foreign participation in the [illegible]maceutical industry, the Hathi Committee report [illegible] it provides the most effective and econo[illegible] method for the transfer of technology in which technological obsolesence is quite significant". Collaborators have also given the benefits of later research although these at best of times can only be marginal.

TABLE II

Number of Foreign Collaboration Agreements Approved : 1948 to 1977

Year	Total number of cases approved	Cases involving foreign capital participation
1	2	3
1948-55	284	–
1956	82	
1957	81	
1958	103	
1959	150	-
1960	380	
1961	403	165
1962	298	124
1963	298	115
1964	403	123
1965	241	71
1966	202	49
1967	182	62
1968	131	30
1969	134	29
1970	183	32
1971	245	46
1972	257	36
1973	265	34
1974	352	55
1975	244	40
1976	282	39
1977	242	27
TOTAL	5442	1077

The next question is as to whether these agreements have been unduly restrictive. Restrictive clauses, more often than not, apply to exports primarily, and only marginally to other areas such as design, raw materials, machinery, marketing and prices. Even here, the restriction is only partial, to the choice of three or four alternatives the objective being mostly to ensure the success of the technology, the quality of the product and its brand image. It is true that, at times, agreements restrict exports to certain areas. But there have also been agreements which has export obligations, at times, 100 per cent. On the whole, it appears that collaborations have not unduly restricted exports or proved harmful to the development of indigenous technology. Actually, they have helped to solve problems and spread the technological spirit.

Again, generally there is no overt restriction on the subsequent transfer of the technology. But by the very nature of things there is less likelihood of that particular technology being transferred. Firstly, the Indian firm, to protect its competitive position would not really be enthusiastic to part with technology; secondly, products when they appear on the market have a tendency to be bunched thus obviating the need for transfer. This also accounts for the seemingly repetitive import of technology. In the context of repetitive import of technology it must be remembered that very rarely are two technologies identical, although the end-products could be.

The economy has been able to get both know-how, and in the case of some products, both the brand name and know-how and to absorb the technology. Collaborators have rarely withheld information, and if there have been failures, these have been occasioned by a number of factors not necessarily related to the collaboration agreement. If at times the latest technology is not incorporated, it is because the same, for a variety of other reasons, has not been sought. These agreements have helped in setting up plants, and in providing continuing services. They have generally helped to solve technical problems which arise when implementing projects. In many cases elaborate marketing systems as in the case of Levers or Brooke Bond have been set up. Indians have been trained both in the plant in India and abroad and after some time have been able to take over and have been entrusted with functions previously carried out by non-Indians. In recent times, the technological achievements of the older enterprises, mostly acquired by collaboration agreements, is sought to be harnessed for rural development.

The other aspect relates to the rate of royalties and the duration of these agreements. Technical collaboration agreements involve direct costs in the form of outgo of profits, dividends, royalties and technical fees. The objective of the Government is to minimise these costs. Modern technology has to be harnessed without overpaying for it. The market for technology is highly imperfect and it is well-neigh impossible to fix a precise price for technical information which is the most closely guarded secret of modern production. Again, the world over there is considerable competition to attract investment, and with it, technology. It must be also remembered that from the suppliers' view point the return from a successful innovation has also to cover the cost of unsuccessful ones.

From table V and VI on page 94 it would be observed that over the 16 year period 1960-61 to 1975-76 payments by way of royalties (Rs 105.27 crores) and technical know-how fees (Rs. 175.18 crores) amounted to Rs. 280.45 crores, or on an average, Rs. 17.53 crores per annum. After 1965-66 the outgo by way of technical know-how fees exceeded those by way of royalties. Table VII on page 75 depicts the remittances made abroad on account of profits, dividends, royalties, technical know-how and interest payments by the private sector for the most recent period 1973-74 to 1975-76 Although public sector units also have similar outgoings by way of royalties and technical know-how fees, such data are not readily available

It would be observed from Table VII that in 1975-76 royalties (Rs. 10.5 crores) and technical know-how fees (Rs. 25.7 crores) together accounted for Rs 36.2 crores This would be less than one per cent of value added or output of manufacturing or bill of merchandise imports in 1975-76. There is, thus, little ground to believe that India has paid excessively for collaboration agreements; the terms have not been onerous and rates nearer the maximum of 5 per cent have been only in technology-intensive industries such as electronics pharmaceuticals etc

As regards the period of agreements, on the face of it, it appears that the period of the agreements is too short But it has been the experience that in most cases the period has been, with exceptions, sufficient

TABLE III

Industries-wise Foreign Collaboration Agreements Approved : 1971 to 1977

Scheduled Industry	1971	1972	1973	1974	1975	1976	1977 Jan.-March
Metallurgical	10	13	11	23	21	12	—
Fuels	—	—	1	1	—	—	—
Boilers and Steam generating Plants	1	3	3	5	4	1	4
Prime movers (other than elect generators)	—	1	—	4	—	1	—
Electrical equipment	52	39	55	72	60	63	14
Telecommunications	—	—	1	—	—	—	..
Transportations	16	19	31	34	15	18	3
Industrial machinery	32	45	54	69	55	57	16
Machine tools	28	19	19	14	12	19	1
Agricultural Machinery	13	-	1	—	—	—	—
Earthmoving machinery	1	2	2	—	1	1	—
Misc. mechanical & engineering Commercial, office & household equipment	4	7	11	13	11	13	—
Commercial, office & household equipment	6	4	6	5	1	1	—
Medical and surgical appliances	1	2	1	4	3	1	—
Industrial instruments	4	3	2	6	2	4	—
Scientific instruments	-	1	1	-	—	2	—
Mathematical survey & drawing instruments	—	-	-	..	1	—	—
Chemicals (other than fertilizers).	37	31	16	41	40	36	3
Photographic raw film and paper	—	—	—	—	—	1	—
Dye-stuffs	1	—	—	—	1	—	—
Drugs and pharmaceuticals	2	1	3	—	2	1	2
Textiles (incl. those dyed, printed & processed).	5	2	1	5	3	2	1
Paper & Pulp (incl paper products)	4	5	6	6	—	2	1
Fermentation	1	3	1	—	—	—	1
Food processing	1	—	1	2	4	2	—
Vegetable oil and vanaspati	—	—		-	—	1	—
Soap, cosmetics & toilet preparation	—	—	—	—	1	—	1
Rubber goods	1	8	5	12	11	4	—
Leather, leather goods & pickers	3	1	1	3	6	1	—
Glue and gelatine	2	—	1	1	2	—	—
Glass	4	2	6	5	2	5	1
Ceramics	4	4	3	5	7	7	1
Cement and gypsum products	1	1	1	1	2	4	1
Timber products	1	—	—	2	2	—	—
Consultancy	1	6	1	6	9	—	—
Miscellaneous	9	35	20	13	20	23	5
TOTAL	245	257	265	352	244	282	55

TABLE IV

Country-wise Foreign Collaboration in India : 1957-74

(number)

Country	1957-66	1967-71	1972	1973	1974 (Jan -June)	Outstanding As on June end 1974	Outstanding percent to total
U.K.	707	197	38	53	31	1,026	24.5
USA.	450	172	62	48	53	785	18.8
West Germany	389	144	49	60	48	690	16.5
Japan	216	100	27	38	23	404	9.7
Switzerland	120	46	15	10	11	202	4 8
France	94	46	14	13	14	181	4 3
Italy	69	25	8	5	10	117	2 8
East Germany	58	19	3	4	1	85	2.0
Sweden	36	20	4	7	16	83	2.0
Netherlands	38	16	4	2	1	61	1.5
Czechoslovakia	27	16	6	5	2	56	1 3
Denmark	28	10	1	3	4	46	1.1
Belgium	23	6	3	1	4	37	0.9
Austria	24	6	1	2	—	32	0.8
Canada	17	5	1	2	1	26	0.6
Hungary	12	5	3	1	1	22	0.5
Poland	18	—	—	1	—	19	0.4
Yugoslavia	11	3	1	1	—	16	0 4
Finland	4	2	—	—	1	7	0.2
Others	220	38	17	9	5	289	6.9
TOTAL	2,560	876	257	265	226	4,184	100.0

for the user to imbibe the know-how Also, whenever genuine difficulty is faced, extension has been granted

From the foregoing it could be concluded that India has been able to secure know-how on reasonable terms. It might be recalled in this context that according to a NCAER report Japan entered into collaboration agreements for longer periods and the royalty paid was higher.

It has been observed earlier that technical know-how can be paid for in a lumpsum amount or on a continuing royalty basis. Government relatively favours lumpsum payments. Lumpsum payments would be cheaper while on a continuing basis more would have to be paid. But this opens up the visits of more know-how prospects, ensuring a continuous inflow of knowledge and involvement of the concerned parties However, lumpsum payments would mean higher initial capitalisation. Industry has generally found continuing royalty payments arrangements beneficial especially in a world where technology is rapidly changing

Case for a liberal policy

There have been a fairly substantial number of rejections of collaboration proposals too (table I). For example, in 1970 there were 197 rejections as against [illegible] approvals; the grounds for rejections relate mostly : "capacity not needed", "low priority of product", "terms not acceptable", "technology available indigenously" or "technology not considered necessary". The selective import policy towards technology does not permit foreign collaboration in established industries or where indigenous technology is available such as cotton and jute textiles, cement, sugar etc, or in areas where existing units in a particular field would be jeopardised by new agreements. This policy might warrant relaxation where exports are involved and where there are possibilities of significant cost reductions should import of technology be permitted

Again, many of the established industries and several products such as machine tools are now over 20 years old and are in need of upgradation of technology. The latest Guidelines (for 1978-79) for industries broadly indicates the areas where upgradation in technology exist for a wide range of products. Upgradation of technology is indicated in a number of items, to illustrate a few, such as steel castings, diesel engines, protective relays, capacitators, bicycles and others. Foreign collaboration for technology import would be considered for a host of items such as special castings, automotive and alloy iron castings, advance forging, special types of motors, power capacitators, special types of transformers, x-ray equipment, circuit breakers, items of computers, several items of electronic and electrical equipment, a number of items of machinery (ceramic, pharmaceutical, coal mining, food processing, gas cutting, welding,

TABLE V

Remittances Abroad of Indian Private Sector Companies: 1960-61 to 1975-76
Time Series Data

(Rs. crores)

Year	Profit	Dividend	Royalty	Technical know how fees	Interest	Total
1	2	3	4	5	6	7
1960-61	—	11.38	9.03	3.07	--	23.48
1961-62	—	14.14	8.83	2.13	—	25.10
1962-63	—	18.35	8.09	2.38	-	28.82
1963-64	—	16.11	9.50	3.18	—	28.79
1964-65	—	20.30	3.26	3.20	—	26.76
1965-66	13.50	19.40	2.95	6.98	—	42.83
1966-67	14 47	28.77	5.13	10 43	-	58.80
1967-68	15 95	32.70	4.32	14 68	—	67.65
1968-69	12.96	30 25	4.78	17.97	—	65.96
1969-70	12.72	31.41	5 80	13.05	9 28	72 26
1970-71	13.12	43 48	5.23	20 63	12.80	95.26
1971-72	9.94	38 87	5.86	13.90	12.13	80.70
1972-73	15 54	39.08	7 33	11.33	15.60	88.88
1973-74	21 91	37 51	6 21	14 08	16.27	95.98
1974-75	7.19	18.46	8.46	12.56	36.70	83.37
1975-76	20 36	24.84	10.49	25.66	24.65	106.00
Total remittances between 1960-61 and 1975-76	157 66	425.05	105.27	175 23	127.43	990 64(a)

TABLE VI

Remittances Aborad of Indian Private Sector Companies : 1960-61 to 1975-76:
Country-wise Data.

Country	Dividend		Royalty and Technical fees		Total	
	1971-72	1972-73(b)	1971-72	1972-73(b)	1971-72	1972-73(b)
1	2	3	4	5	6	7
UK	20.05	13.50	3.84	2.22	23.89	15.81
USA	12 11	7.87	5.30	4.35	17.41	12.22
West Germany	1.37	1.60	2 00	2 79	3.37	4.39
Switzerland	1 31	2.01	0.74	0.62	2 05	2.63
USSR	--	—	1 70	1.21	1.70	1 21
Netherlands	0 67	0.79	0.62	0.12	1.29	0.91
Italy	0 59	0.37	0.86	0 30	1.45	0.67
Canada	0 94	0.63	0.14	—	1.08	0.63
France	0 08	0.07	1.04	0.42	1.12	0.49
Japan	0 09	0.09	1 24	0.20	1 33	0 29
Others	1.66	1.13	2.28	1 63	3.94	2 76
Total remittances	38 87	28.15	19 76	13 86	58.63	42 01

NOTES: (a) Excludes remittances of interest on foreign loans up to 1968-69, profits up to 1964-65 and payments to foreign technicians in foreign countries.

(b) April-December:
Data up to 1963-64 include remittances by both public sector and private sector companies
Data for later years relate to private sector companies

Table VII

(Rs lakhs)

Year	Profits	Divid-ends	Royal-ties	Know-how	Inter-est
1973-74	2191	3751	721	1418	1627
1974-75	719	1846	846	1256	3670
1975-76	2036	2484	1049	2566	3465

packaging, printing, pulp, paper, rubber and tea and others) and a number of other industrial products. In fact, it appears, that in the most of the products Government would permit foreign collaboration, provided a technology more sophisticated and upto date than is currently available or in use in India is incorporated in these products. In this context it might be mentioned that as over two decades have passed since the setting up of these industries, upgradation would more often than not, necessitate a new agreement as the technology would have changed.

It would be observed that foreign collaboration is looked down in non-manufacturing activities such as trading and banking. In view of the growing international capital market and the need for such services it might serve a useful purpose if there is relaxation in this area. Also, the policy is restrictive where there is dependence on importation of raw materials. In view of the growing sophistication of the economy, it is now not inconceivable that the stage has been reached where substantial value added and exports based on imported raw material is possible.

The case for a more liberal policy towards import of technology is also strengthened by the fact that India has reached the stage when she herself is going out in a big way to set up joint ventures in third countries and is emerging as an exporter of software. This could be done more effectively if our technological base is consolidated widened and updated by all possible means not excluding import of technology. ☐

Increase in Passenger and Cargo Traffic of Indian Airlines

THE PASSENGER traffic of Indian Airlines registered an increase of 15 per cent in 1977-78 over the previous year. The number of passengers who travelled by the Indian Airlines during 1977-78 was 4 373 million as Compared to 3 807 million during the previous year.

Similarly the domestic air cargo traffic of the Indian Airlines had registered an all time record growth of 33.1 per cent during 1977-78 as compared to last year. The freight carried rose to 37,606 tonnes from 28,265 tonns last year. 13,610 Tonnes of mail as compared to 12,897 tonnes during the previous year, was carried, registering a growth rate of 5 5 per cent.

The 25th Annual Report of Indian Airlines for the year 1977-78 reveals an operating surplus of Rs. 22 72 crore and a net profit of Rs. 14 33 crore. With this the Corporation was able to wipe out all of its accumulated losses despite 100 per cent increase in the landing fee and a new levy of route navigation charges, involving an additional annual burden of about Rs 7 crore. The operating revenue went up from Rs 127 52 crore to Rs 150.68 crore, an increase of 18 2 per cent.

The gross foreign exchange earnings went up from Rs 28 60 crore to Rs 41 23 crore, an increase of 44 2 per cent. After meeting all the expenses and loan repayments in foreign exchange, the airlines registered a net foreign exchange contribution of Rs 6 37 crore to the national exchequer.

Indian Airlines performance in promoting tourist trade was equally impressive. It carried 6 000 tourist groups as against 4,600 in the previous year. To achieve this the airlines provided 324 additional flights and re-scheduled another 102.

To meet the increasing demand Airlines has already added two additional Airbus aircraft and is planning further fleet augmentation in the next two years ☐

A symbol of national integration

[illegible]LLAGE 7 'S' in the Sri Karnpur Block of Sriganganagar district has the unique distinction of [illegible] a temple, a Mosque and a Gurdwara all the [illegible] places of worship at a common place in the [illegible]e. The devotees of different sex and religion collect to their respective place of worship in the form of a rural Mela and there is complete harmony amongst all the sections of community.

-F.P.O. Sriganganagar


CLOTHING COMMITMENT
Human commitments are diverse From family and Kinship to the larger ones like social and national.
The commitment at NTC has been one for clothing the masses, meeting one of the basic needs of man
NTC mills produce a large variety of durable low cost fabrics required by the common man This has been made possible by tulfilling our earlier commitment to rehabilitate the sick textile mills We have put life into them, 111 in number, now churning out over 900 million metres of cloth and 60 million kilograms of yarn for handlooms and powerlooms
NATIONAL TEXTILE CORPORATION LTD.
Sewa Kiran Building,
13, Kasturba Gandhi Marg,
New Delhi 110001
NTC
CLOTHIERS TO THE NATION
Newfields

BOOKS

Panchayat Raj

Avard : Design of a Panchayat Plan.

Assam (1) , *Micro-level planning studies , New Delhi,* 1978 *Price—Rs* 30/-

THE DESIGN of Panchayat plan studied by AVARD being simply an eye opener sets out a number of development schemes in different sectors that have a Panchayat perspective. They studied Pub Kumarikata, one of the eight gram panchayts of Tamulpur Block, Kamrup District, Assam State Pub Kumarikata Panchayat came into being in early 1974 This book consists of nine chapters and the first chapter deals with the background. The survey focused on manpower, economic structure, agricultural development, irrigation potential and social infrastructure

This Panchayat has 28 villages About 55 per cent of the population lives in villages each having less than 1000 people The sample survey shows that in many rural situations, many persons especially the women folk keep themselves out of the labour market. The number of people forming the actual labour force is estimated at 8648, 43 8 per cent The participation rate for males is 54 8 per cent, and for females 32 2 per cent. Separate participation rates and occupational distribution of workers in the age group 16 to 60 are calculated While the total participation rate is 40.4 per cent, it is 49 1 per cent for males and 30 7 per cent for females Agriculture is the common occupation both among men and women.

The study shows that 2 6 per cent participation rate is the highest among non-agricultural households. It is also found that the participation rate in households is influenced by the caste factor. The total income of the area from all sources is estimated at Rs 1 10 crores Agricultural wages form 31 16 per cent of the total income

The study shows that the service households have the highest income i e Rs 4376 and those engaged in business, trade, and commerce the lowest i.e. Rs. 1583 The per capita available income in an average family is estimated at Rs 559 The survey also reveals that 36 20 per cent of the households are landless and share 27 15 per cent of the total income

The per capita income in the study area is Rs 559 Less than 30 per cent of the families have percapita income above the average. It is also found that even those owning 2-5 acres of land are below the poverty line. The average annual household income is Rs 300

The study also reveals the varying incomes of diffe- caste groups in the area It is found that the mins in this area have got the lowest percapita ne of Rs 411 annually It is also found that this has good tradition of community life free from quarrels which help them to maintain some sort irrigation system by digging channels

is study revealed a number of factors which an ler may not be aware of the development schemes s Panchayat area Pub, Kumarikata Panchayat area nts an interesting landscape to an outsider But, looking at the life style of the people one feels frustrated about the failure of the human factor to utilise the opportunities offered by Nature This report prepared by a voluntary agency has an edge over any district planning body's version of things.

The study team arrives at conclusion by statistical analysis which makes the study a remarkable one. For instance in page 31 they write that, "the distribution of all households by annual income graphically depicts the depth of poverty in the area (Table 3 4) The average annual household income is Rs 3006, 38.23 of the households are the poorest of the poor with annual income below Rs 2000 Overall about three out of every four persons in the area are below the poverty line (Table 3 5)

The proposals recommended in this report are helpful for the overall development of the Panchayat. At the same time, they did not examine the possibilities of railroads and electrification for Pub Kumarikata This can't be considered as one of the defects of the study As a whole, it can be said this study is a remarkable one since it is an eye opener both for the Government and the people

K Francis

Industrial Relations

Employer-Employee Relations

by I Bhaskara Rao Concept Publishing Company, Delhi , Pages 264 Rs 60|-

A COMPREHENSIVE Bill on Industrial Relations is under discussion in Parliament. The importance of harmonious industrial relations has assumed urgency. For the past decade, on an average, the country has been losing 20 million mandays annually on account of labour trouble This year so far we have already lost about 11 million mandays

At this juncture a book on employer-employee relations is most welcome. But the scope of the present volume is limited to the study of relations between the Government of India and its employees This constitutes a significant sector comprising as many as 3 million persons Of these more than 80 per cent belong to the Railways, Posts & Telegraphs, and Defence, and about 1 5 million are members of one union or the other

Since the Government is supposed to be a model employer, if its relations with the employees are based on mutual trust and goodwill, it can serve as a powerful catalyst to bring about alround better employer-employee relationship "The difference between private management and Government in regard to employer-employee relations is rather one of degree than of kind" points out the author

The author thinks that the Government has "failed to maintain industrial peace" among its 80 per cent employees in the departments of Railways, P & T and Defence Major reasons for this failure are that it had neither seriously attempted to promote a separate industrial relations policy for its industrial employees nor it even implemented the labour legislation applicable to them

Mr Rao traces the history of employer-employee relations in public service in an international perspective. The movement has progressed a long way from the stand that the Government was 'sovereign', to granting the right of strike to public servants. Eliot H Kaplan categorically stated that Government employees had no right to strike, whereas Steling D Spero argued why public employees should not have such a right. In Britan, introduction of Whitleyism in 1919 was a landmark in the history of British service staff relations and served as a model for most of the democratic countries.

In India, the Industrial Disputes Act was formulated in 1947 and provided settlement of disputes through conciliation and adjudication. It also introduced the concepts of Joint Consultative Machinery and a National Council. The JCM Scheme, however, prohibited full participation for the Government. The author feels, the scheme was never fully implemented at the departmental level which caused frustration among the employees.

He adds "the Government has failed to do much in pay matters" also. It has not evolved suitable principles *for determining the pay and allowances of its employees* even after the recommendations of three Pay Commissions, four D A Commissions, Labour Commission, Administrative Reforms Commission and various other studies.

Mr. Rao has made useful suggestions to encourage harmonious labour-management relations in the Government sector. For example, the Government should make efforts to introduce the JCM Scheme at grassroots level and expedite the process by setting up regional offices ; a Joint Standing Committe of both sides of the National and departmental Councils under the leadership of the Chairman of the National Council should be set up ; there should be a provision for compulsory arbitration ; the Government should not claim to be the final arbitrator and the matter should be left to the Board Arbitration, etc. His observations deserve examination.

Baldeo Sahai

Shares

Valuation of Equity Shares in India.
Prasanna Chandra

Published by M/s Sultan Chand & Sons, Delhi 2
1978 *Pages about* 150, *Price Rs* 30/-

The stock market in India has a preference of shares of small denominations and shares of larger companies, so also the stock market is 'short-sighted', where dividend appears to be over-whelmingly powerful vis-a-vis growth and retained earnings. The primary object of doctoral dissertation of Mr Prasanna Chandra seems to be same, which entitled "An Assessment of the Influence of Certain Corporate Financial Economic Variables on Equity Shares Prices period". Author has also admitted while presenting the details of 1971-75 period separately accepting his limitations of level of details and sample size.

The author also acknowledges the previous studies on the subject but he claims that this is a survey which covers large samples by using the (i) cross sectional analysis and (ii) he has also assumed that the average share prices during the cross section period will remain as the dependent variable.

The claim of relevance of this study seems to [illegible] reasonable, because it will promote the Corporat[illegible] Management's interests in enhancing the market-valu[illegible] of its equity capital, for the simple reason that th[illegible] performance of management is judged by the pric[illegible] performance of its equity shares, and the compan[illegible] can also raise additional funds.

The study has been made of textile and other in[illegible] dustrial units (barring Banking and Insurance com[illegible] panies) numbered 166 and 80 shares are drawn [illegible] samples at random basis. It is the nut-shell obse[illegible] vation that the 'risk' and 'leverage' have no influen[illegible] on share prices, while dividends, growth and size [illegible] the firms do influence the share prices. With the findings author has also observed about the conditio[illegible] of stock-market in India.

> "The market for market shares is not ve[illegible] sophisticated in its evaluation. It go[illegible] mainly by dividend and company size fa[illegible] tors which are readily measurable. It pla[illegible] in low key factors like growth and ri[illegible] *which are difficult to measure.* Perhaps [illegible] regards dividend and company size as pa[illegible] tial surrogates for factors like growth an[illegible] risk which are difficult to assess."

Referring to the restrictions on dividend payment i[illegible] posed in June, 1974 the author feels that consider[illegible] the 'short-sighted' character of the share market [illegible] Government must exercise great caution in impos[illegible] dividend curbs. Dividend restrictions are likely [illegible] have depressing effects on the stock-market. Th[illegible] instead of clamping restrictions on dividend payme[illegible] the Government may on the contrary explore [illegible] possibility of inducing firms to pay a higher divide[illegible] This measure will have a favourable influence on [illegible] stock-market and may enhance the rate of return [illegible] equity shares.

To discourage the limitated dealings in the la[illegible] companies, author has suggested—(i) promotion [illegible] jobbing for a large number of scrips, (ii) reductio[illegible] transfer fees and brokerage commission, and [illegible] Shareholders' education. These seems to be relev[illegible] in the present Indian perspective of the stock-mark[illegible]

Some issues being framed by the author give us [illegible] impetus and leave before us some unsolved pr[illegible] lems—

- —How the shares will be valued of the fir[illegible] which had erratic past performance ?
- —What should be the techniques of the valu[illegible] of equity shares of newly established co[illegible] panies ?
- —So far no criterion could be worked out [illegible] the analysis of inter-industry samples. H[illegible] these can be studied profitably ?
- —To what extent the influence of certain fir[illegible] and institutional factors (like Managem[illegible] Group, Composition of Shareholders) af[illegible] the valuation of equities ?

The above factors are required to be studied [illegible] dummy variables, and it will also be necessary to [illegible] a discontinuous sample or use of a limited per[illegible] will be justified. It is scholarly academic exer[illegible] may be fruitfully used by the research-scholars [illegible] the Manageent Accountants to use the models [illegible] further elaboration and analysis of their empir[illegible] studies and comparison with the results.

Gopal Das Ra[illegible]

(Continued from Cover II)

utilising Plan outlay has not been satisfactory, it may be stated that the shortfall in 1977-78 in the first year of our term was only about 4 per cent.

The primacy to rural development is also reflected in our raising the total outlay in 1978-83 plan for Rural Development to about 43 per cent as against 37.5 per cent in the Fifth plan period.

In the cottage and household industries sector the proposed outlay is Rs. 1410 crores as against Rs. 388 crores in the Fifth plan period. On adult education, rural health, rural water supply, rural roads, rural electrification, house sites for the landless, rural housing and nutrition which are classified as revised Minimum Needs Programmes the outlay would be stepped up to Rs. 4180 crores as against Rs. 800 crores in the years 1974-78.

What is more, we have taken the decision that in the first 3 years of the current plan the pace of development would be accelerated through implementation of the schemes of integrated rural development at block level to achieve near full employment in 1300 blocks by March 1981 and to cover with water supply all the 1.5 lakh villages with inadequate or no water supply by the same date.

At the conference of leading bankers which I convened in November last decisions have been taken to increase the flow of funds to small producers and self-employed persons particularly those of Scheduled Castes and Scheduled Tribes, to widen the scope of different'al interest rates scheme, to widen the margin money scheme for the self-employment and to finance small entrepreneurs to a larger extent.

These measures are bound to make a significant dent into the problem of unemployment and a low development of village and small scale industries in rural areas.

In the industrial sector the progress has been remarkable by all standards. Industrial production recorded a growth of 8 per cent between April and November. Power production has also shown an increase of about 13 per cent. With the formation of District Industries Centres in every District industrial activity including village industries is bound to accelerate over the entire country.

A Cabinet Committee has been set up for monitoring industrial production and looking into the problems of coordination among Ministries to facilitate greater production by removing bottlenecks that may arise. It has already succeeded in making substantial improvement in our industrial landscape and we are looking forward to further increase in industrial production in the next year.

A significant feature of the measures to improve agricultural production since the Janata Government came into office is the record increase of 1.5 million hectares in the area under irrigation in the year 1977-78 and even a further betterment of 2.5 million hectares expected in the current year.

Never before has such an increase been registered [illegible] one year in the previous 30 years. It must be [illegible]ne in mind that all this progress in agricultural [illegible] industrial sector has been achieved despite the [illegible]ack we have suffered on account of extensive [illegible]ds last year and even much worse havoc in the [illegible]ent. year

Fair Return to Farmer

[illegible]st it should be felt that due attention has not [illegible] paid to the problem of ensuring a fair return to the farmer I might indicate that the support price of paddy, coarse variety, has been raised in 1977-78 to Rs. 85 per quintal as compared to Rs. 77 in 1976-77, of wheat to Rs. 112.50 as against Rs. 110 in 1976-77 and of gram to Rs. 140 as against Rs. 125 in 1976-77.

The beneficial effects of these increases in prices are seen in the procurement of rice and wheat. The procurement of rice in the current year has been 25.21 lakh tonnes as against 19.84 lakh tonnes in the previous year and of wheat 54.69 lakh tonnes as against 51.65 lakh tonnes in 1977.

Our election manifesto recognised the need for maintaining price stability. This was in the background of a rise in prices by 12 per cent in the year preceding our assumption of office when the Emergency was in full force.

Our record in this respect has been remarkably different. Over the year ended October, 1978 the general price level had registered an increase of only 1.8 per cent.

The wholesale price index by early December was 184.7 per cent i.e., 0.4 per cent lower than the index in the corresponding period last year. The consumer price index for agricultural workers has shown similar stability while the consumer price index for industrial workers which include certain manufactured items has been more or less the same throughout the year.

This stability in price level has been maintained in spite of increase in money supply over the year and the budgetary deficit of about Rs. 800 crores during 1977-78 and an expected deficit of Rs. 1500 crores during 1978-79.

Balance of Trade

Although our balance of trade and payments position has shown some adverse trends recently on account of protectionist measures in developed countries and the increase in the import bill, the foreign exchange reserves have increased by Rs 1637 crores in 1977-78 and stand today at Rs 4813 crores.

In the light of these statistics we can lay claim that the country's economy today is in much better shape than what we inherited in the past and holds forth promise of further improvement which would enable us to fulfil our commitment of making a substantial dent into the problems of poverty and unemployment by the end of the current plan, and if all goes well thereafter, we shall achieve a reasonable measure of elimination of these perennial features in our economic life by the end of the stipulated 10-year period.

Strategy for the Future

Thus the strategy we have evolved to make substantial progress in the future is simply to carry resources to the neglected under-developed areas, to attack the problem of poverty and unemployment at its base, to provide drinking water, electricity, health care, schooling, roads and communications primarily to the villages and not merely to the urban areas, to improve agriculture by means of providing adequate supply of inputs and increasing the irrigation potential as well as the actual area under irrigation in record strides rather than in slow motion attempts as in the past.

The Food For Work scheme is being geared to generate additional employment of 400 million man-days during 1978-79. Following the introduction last year of the Centrally sponsored accelerated water supply programme 16,000 more villages were provided with drinking water in one year as against 64,000 from 1955 to 1977.

Regd. No. D (D)-152

DEVELOPMENT NOTES

Rs. 96.31 Crore Export Orders for Public Sector Units

THE PUBLIC Sector Undertakings under the Department of Heavy Industry secured export orders worth Rs 96.31 crore and orders worth Rs. 85.10 crore were also executed during the period April to September this year.

In September alone, export orders worth Rs. 19.69 crore were secured and worth Rs. 15.93 crore executed

At the end of September 1978, orders worth Rs. 780.25 crore were pending with these undertakings The major orders under execution are with Engineering Projects (India) Ltd (Rs. 456.19 crore), Bharat Heavy Electricals Limited (Rs 249 45 crore), Heavy Engineering Corporation (Rs 27 73 crore), Jessop and Company Limited (Rs. 12.16 crore), and Braithwaites & Company (Rs 10.17 crore)

Sugar Production up

ABOUT 1.04 lakh tonnes of sugar was produced in the first fortnight November, 1978 against 0.92 lakh tonnes, produced in the corresponding period last year.

In the season for 1978-79 upto November 15, 1978, 1 78 lakh tonnes of sugar was manufactured, whereas during the last season the production stood at 1·25 lakh tonnes. About 25 59 lakh tonnes was the total closing stock as on November 15, 1978, whereas it was 11 42 lakh tonnes on the same day the preceding year

Boom in silk for fabrics, garments and wool exports

DEMAND FOR Indian made clothes in western countries is on the increase We exported silk fabrics and earned Rs 3.51 crore foreign exchange in October this year against Rs. 2 50 crore, the earnings during the same period last year The increase is made possible on account of rise in the quantity of fabrics shipped In the period January-July 1978 the exports touched the figure of Rs 22 75 crore, whereas during the same period last year fabrics worth Rs. 17.47 crore were purchased by other countries In other words, the rate of exports is up by 30 2 per cent. Silk clothes are in great demand in the U S Market. Goods worth Rs 2 95 crore were shipped during April-October 1978 to America only Next biggest buyers are the UK and West Germany Overseas buyers are mad after Indian sarees. Sarees exported during April—Oct. 78 earned foreign exchange worth Rs. 5 60 crore.

Wool Export Up

WOOL AND Woolen export recorded an increase of Rs. 2.37 crore during April—October 78. During the period April-Oct. 78 goods worth Rs. 63.16 crore were exported against the target of Rs. 115 crore for 78-79. According to the Wool and Woollen Export Promotion Council, export in this period of the previous year stood at Rs. 60.79 crore. Items like woollen fabrics, garments, blankets are in great demand.

NGEF Electricals For the First Tube Rail

THE NEW GOVERNMENT Electric Factory, a State-owned Electric Industry in Bangalore, has bagged the prestigeous Rs. 14 9 crore contract for supply of Electrical Equipment for the underground rail cars of the Calcutta under-ground rail, the first tube railway in the country.

The contract covers the overall design of the traction system, manufacture, testing and commissioning of the electrical and break equipment incorporating the latest cam shaft controls for the cars.

The coaches will be manufactured at the Integral Coach Factory, Madras, and the electricals for series production will be at NGEF.

This is the first time such sophisticated technology and equipment is developed in the country for use in the tube railway.

NGEF has been supplying the locomotive transformer, rectifiers, D. C. Sub station equipment to the Indian Railways With this contract, NGEF has emerged as a major supplier of rolling stock.

21 Per cent rise in leather exports

THE DEMAND for finished leather and leather goods in other goods is on the increase. Exports of the same registered a growth rate of 21 per cent. We exported leather worth Rs. 183 48 crore during April-October 1978 where as the exports stood at Rs 151 05 crore during the same period previous year

Finished leather worth Rs 103.71 crore was supplied to our overseas buyers against Rs. 57 47 crore in the corresponding period last year. Finished cow hides, buff calf skins, sheep and goat skin were in great demand

Leather goods exports rose to Rs. 8.10 from Rs 5 14 crore Leather garments, wallets, and hand bags, fetched major earnings. Footwear exports mostly to the USSR, the US and Canada touched Rs 8 33 crore during the first seven months of 1978-79 against Rs. 7 42 crore in the same period preceding year. Footwear components worth Rs 4 99 crore were exported 58 per cent increase on Rs. 3.82 crore, the performance of the previous year.

Earnings from goat and other hides rose by about 100 per cent from Rs 21 lakh to Rs 42.75 lakh

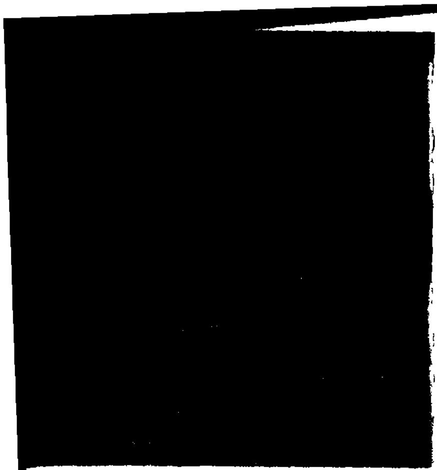
Garment Exports Up by Rs. 54 Crore

GARMENTS WORTH Rs 131 crore have been exported in this year against Rs. 77 crore last year Out of this export of handloom garments account for Rs 60 crore against Rs 37 crore last year. □

STC bags three million dollar Export order

STATE TRADING Corporation secured a three million dollar worth order to export laboratory equipment to a North African country against stiff competition from the US and the UK. The entire export consignment is expected to be manufactured by small scale units. The Corporation has also finalised a Rs. 70 lakh order for the supply of handtools to Baghbad.

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

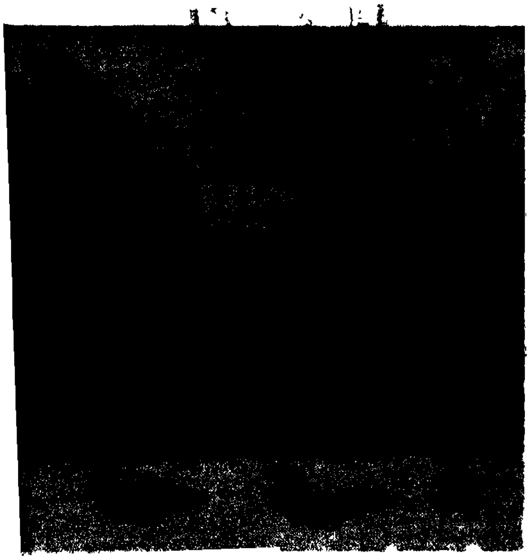




XXIII/3 16 FEBRUARY 1979



80 Paise









YOJANA

Volume XXIII Number 3

27 Magha, 1900

16 February, 1979

...lished on behalf of the Planning Commission ...amese, Bengali, English, Gujarati, Hindi, ...lam, Marathi, Tamil and Telugu.

...j a n a seeks to carry the message of the ...t is not restricted to expressing the official ... view.

IN THIS ISSUE

Chief Editor : P. C. Roy

Editor : N. N. Chatterjee

Assistant Editors: P. Perumal
R. R. Rao

... Editor : Vijay Verma

... Correspondents :
...ABAD · Raman Patel
...AY : Avinash Godbole
...TTA · S K. Ray
...ABAD B N Murthy
... · T R Panchapagesan
...DRUM · Rosscote Krishna Pillai
...phic Officer K S. Nagaraj
... : courtesy—National Museum of Natural ..., New Delhi

... Office : Yojana Bhavan, Parliament ...ew Delhi-110001 Telegraphic Address: New Delhi. Telephones: 383655, 387910, (extensions 402 and 420) Circulation: Manager, Publications Division, Patiala ...ew Delhi-110001.

...ion: Annual—Rs. 18. Two Years—Rs. 30 ...ears—Rs.42 Foreign Subscription : One ... 2 70 or $5.00 Two Years—£ 4,50 or $9.00 ...ears—£6.30 or $ 12 50 Single Copy— ... $ 0 25

Editorial

Developing Museums and Museology

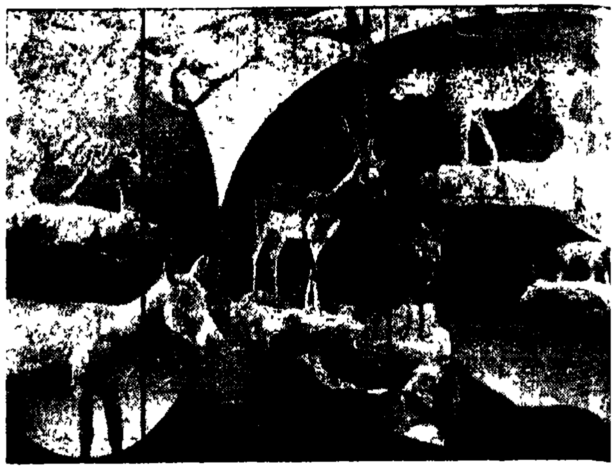
THE ALL India Museums Conference held recently has drawn attention both to the hurdles and successes accompanying the developmental effort of the country in the specialised field of museums and museology. Undoubtedly they have a significant role in preserving the cultural heritage and extending the frontiers of knowledge of the people whose participatory role in a democracy has to be based on intelligence and understanding. Despite the rich potentiality of India in antiquarian remains and art treasures, we have only about 400 museums, big and small. Compared with the countries of Europe and America in the context of size and population, this is a very small number although the earliest museum in the modern sense came into being in Calcutta 165 years ago.

Most of the museums are, however, devoted to antiquities and art though there are a few which contain exhibits on natural history and scientific objects. The Natural History Museum, still located in a rented building in Delhi has been able to justify its existence within a year of its establishment (1978) under the aegis of the Council of Scientific and Industrial Research. In this International Year of the Child it is sad to reflect that barring one in Delhi and another in Lucknow, none of the children's museums deserve any mention. What is worse, the museums continue to be elitist and city-based and no conscious effort has yet been made to take museology to the village for the benefit of the poor masses who live therein. It may not be an easy job. There could be lack of both finance and adequate planning. But given a little imagination and capacity for taking pains, there could be museums on the wheels of the locomotives atleast to cover the length and breadth of the country all along the railway tracks.

There is an astonishing growth of public interest in attending museums and the value of museums as a live instrument for popular education and national integration has been recognised by the Government A proper appreciation of the uniformity of style and technique of art, uniform pattern of natural phenomena and the same general way of life as demonstrated most effectively by the museum objects contribute to a cultural homogeneity. Interpretative interdependence and convergence of civilisation cut across racial differences as a matter of course. But the most effective way to help the museum play its natural role is to make museology an integral part of the national programme of education at all levels. It is true that under a scheme for propagation of culture initiated 7 years ago about 2000 schools and colleges have been provided with kits to enable the students to acquire an insight into the cultural heritage through audio-visual methods. But even the most optimist among the museologists cannot predict when a break-through will occur. The education planners will have to see how best museology can be integrated with our national policy of education.

Meanwhile attention has to be given to preserve the folk art and craft, particualrly in the tribal areas where the process of modernisation is swiftly and irretrievably replacing all that is traditional. Of all the official agencies, Anthropological Survey of India will have to take the necessary initiative and responsibility in this regard. The universities and colleges will have to be encouraged to set up their own museums in the same way as some medical colleges and science faculties are doing. There is an immediate need for setting up a co-ordinating body at the Centre to look after archaeology, art and anthropological museums. Museology is a State Subject and any attempt to supervise or guide the State Agencies is bound to be counter-productive unless undertaken in a spirit of mutual help. ☐

Relevance of Museums in National Planning



Dr. S. M. Nair,
Planning Officer and Head,
National Museum of Natural History
New Delhi.

THE TITLE of this article might give rise to a fundamental question in many minds—What have museums to do in the context of national planning ? An answer in favour of museums will have to be argued out in the present day context of the lack of popularity these institutions have among the public. In the day-to-day life of an individual museums appear irrelevant. Much of this is due to the image of "Glorified Ware-houses" projected by museums themselves.

India today has nearly 350 museums, which by no means is a record to be proud of compared with many other nations of the world. This dismal picture is further aggravated by the un-inspiring state of affairs of the majority of these institutions. Against this background how could we consider any kind of relevance of museums in the context of planning for development ?

Let us examine the functions of the Museum or what they ought to be. Every museum basically fulfills the three-fold functions of collecting, preserving and displaying objects—even if we take a narrow look at what it does. A broader approach to museum function should take us to the very purpose of museums, namely, communication of information on a wide range of subjects, presenting information through the medium of actual objects and appropriate interpretative devices to impart such information. In this respect it can play a unique educational role.

There are various types of museums—of Art, Archaeology, History, Natural Sciences, Science and Technology, Agriculture, Health, Hygiene and so on. Each of these institutions can fulfil an obligation to the society in communicating information in their respective fields of knowledge through a medium that happily lacks compulsion, providing an element of recreation and relaxation where everyone can use his own convenience to utilise this facility. Art and Archaeology museums not only preserve the cultural heritage of the country and help to imbibe in every citizen a sense of pride in one's heritage, but also helps to create aesthetic awareness and sensibilties to appreciate art. Museums of Anthropology depicting the evolution of human culture in its various aspects provide knowledge on different cultural patterns, explaining the biological and geographical reasons for different human races in the world—so essential and fundamental to promote international understanding in a world tormented with racial discriminations, castism and communalism. Museums of Natural History portray the story of life on earth and the inter-relationship between all living forms enabling one to realise the importance of every animal and plant that exists today, the need to protect them, to respect them and to develop a new approach and ethics towards the environment. Museums of Science and Technology depict the impact of science and Technology in the progress of man-kind, technological options that man must consider under changing circumstances and above all create a scientific outlook and temper in the people. Likewise, museums of Agriculture, Health, Hygiene etc. can play specific roles in imparting useful information to enrich human knowledge in these areas. Thus, museums do have an obligation to society—catering to the informational needs of every individual. They offer a facility for acquiring knowledge providing a wide range of options to the users. They can also play a very decisive role in enriching educational institutions through providing real experiences sadly lacking in most of our teaching/learning situations. To the cause of increase and diffusion of knowledge they can contribute through research, publications and various kinds of educational programmes.

Dillon Ripley, Secretary of the Smithsonian Institution, Washington D.C. (U.S.A), the greatest museum complex in the world, observes, "The very nautre of a museum, its unstructured quality, holds out promise for the future of education. Perhaps universities of the future will have to design themselves to be a little more like museums, a theatre of interogation, based on a substructure of relevance, the roots naked and exposed to view".

An appreciation of the educational relevance of museums and their role in active communication of information should bring to the fore, the purpose and function of these institutions. They are, in fact, social aids in the service of man. It is in this context that we must realise the relevance of museums in planning for progress, how-so-ever minor its part might appear in comparison to national planning priorities in areas like agriculture, housing, formal education, technology, defence etc. Even in these areas museums can fulfil a basic role, that is, the role of a communicator of information. ☐

Some Recent Archaeological Discoveries in India

Dr. N. R. Banerjee, Director
National Museum, New Delhi

RCHAEOLOGICAL work in India today is carried out by a number of agencies such as Universities, the State Departments of Archaeo- and the Archaeological Survey of India. And work is not confined to merely excavation but encompasses the preservation of the cultural age against the ravages of time. In both the omitant activities it has reached the highest stan-, thanks first to the tradition, which is more a hundred years old, and to the fillip given to eological activity in India by the indefatigable aeologist, the late Sir Mortimer Wheeler, during ears of his Director Generalship of the Archaeo- l Survey of India between 1944 and 1948. Of ss importance is the realisation by the Government, after independence, of the value of our cultural past and the ample monetary support given to it by them in spite of it being in short supply in general.

The archaeological work in India today is not carried out sporadically, but as a planned pursuit to seek a soultion of the various defiant problems, and to fill the lacunae in our knowledge of the past from the remotest times till today. The plan is coordinated by a Standing Committee of the Central Advisory Board of Archaeology for avoiding duplication of work and to aim at a multipronged attack on the persisting problems. And yet, now and then, it is a chance discovery that provides the intiative to further work. Recent archaeological work in India has given us a rich haul of materials which would help us to re-write the history of the subcontinent . Some of the more important discoveries are recounted here.

Pre-history

The hilly area to the south of Bhopal, on the northern fringes of the Vindhyas had indicated some years ago to Dr. V. S. Wakankar of the Vikram University, Ujjain, a dauntless explorer with a sharp eye, the existence of nearly 600 rock shelters or natural caverns in the neighbourhood of a village named Bhimbetka in district Raisen, Madhya Pradesh. The caverns were ideal hide-outs for wild beasts, but undeterred by this frightful factor, Dr. Wakankar walked into them and found remains of paintings in more than 450 of them, some of them clearly prehistoric as was known earlier from the rock shelters at Adamgarh, near Hoshangabad, a few kilometers further south. Rock shelters of the Stone Age man have been known from many other sites in eastern India, particularly in the Mirzapur area.

Excavations into some of these caves have revealed a continued use of the rock-shelters from the old Stone Age, when they used Acheulian hand-axes, through the Middle Stone Age to almost the medieval times. A closer examination of the paintings has revealed that the earliest paintings go back to Mesolithic times with many super-impositions. It was not possible, however, to correlate the excavated finds to the successive layers of paintings with exactitude, but the pictures mirror the lives of the past through the innumerable centures and are important not merely from the technical point of view, but also from their sociological content. They also prove the purpose and antiquity at once of the tradition of mural paintings in India, which reached its climax at Ajanta in the 5th century A.D. Very soon other scholars and explorers began to look for more such caves and their labours were rewarded by the discovery of caves with rock paintings in the vicinity of the capital city of Bhopal itself.

Some day it should be possible to disengage and distinguish the artistic vestiges of the different periods and to interpret the significance of the works as they related to the daily lives of the hunt and the chase, the kill, the community feast or merriments or an offering to the contemporary idea of the bestower of all goods, and other rigmaroles of life. It would also be possible to comprehend the significance of these works of art. These are far more numerous and perhaps far more interesting than the classic paintings at Altamura in Spain or Lascaux in France.

These rock shelters some of which do not bear paintings have been found in Districts Bilaspur, Raisen, Sagar and Vidisha of Madhya Pradesh. The most outstanding feature of the rock shelters at Ahmedpur near Vidisha is their double storied character.

The discovery of a large number of burials with mesolithic tools in the Partabgarh District of Uttar Pradesh dating back to circa 8000 B.C. made by the Allahabad University is another landmark in the prehistory of India.

Chalcolithic Culture

The chance discovery of a group of five amazing figures of bronze, comprising an elephant, a rhinoceros, and a buffalo on a pedestal with wheels (except for the elephant from which the wheels are missing) and a charioteer driving two bulls with large horns at Daimabad in district Ahmednagar, Maharashtra, has thrown asunder all our classic ideas of bronze metallurgy as well as sculpturing in metal. Apart from the light they throw or suggest on the lives of the past, they have posed a problem in regard to chronology. The tentative estimation that they belong to circa 1300-1200 B C. and is deflective of a late Harappan facies is intriguingly interesting, though not conclusive. At any rate, these objects form an important evidence on the art history of India as well as of the technological development of creating works of art in metal. Subsequent excavation at this site has proved the extension of the Harappan culture into this area of Maharashtra, adding a new dimension to the expansive force of the Harappan culture.

The excavation by the Deccan College, Pune at the site of Inamgaon, in district Poona, Maharashtra has thrown new light among others on the concept of the primordial mother goddess, as the source of all our life giving prosperity. It is in the form of a female figure in terracotta that can be fitted with a stick reaching upto its navel, so as to the seated astride a bull in the style of the later images of Jagddhatri sitting on a lion. Though not a very artistic piece it has its own place in the history of Indian thought, and perhaps metaphysics.

Harappan and Post-Harappan with an overlap

Though in 1931, Sir John Marshall felt that the Indus civilization, properly called the Harappan civilization after the type site, where it was first discovered, could be dated between *circa* 3250 and 2850 B.C., the later excavations and scientific methods of dating having fixed the chronology at *circa* 2350 and 1750 B C. But the mystery of its disappearance from the scene after its glorious career and expanse and hegemony, in an advanced stage of civilised life, or its merger by imperceptible degrees and stages into the tenor of Indian life has been defying solution.

The resent excavations at Bhagawanpura in District Kurukshetra, Haryana by the Archaeological Survey of India in 1974-75 have provided us with a breakthrough, for it has given us a link of the late Harappan culture with the succeeding culture through a stratigraphical overlap, the discovery of a mud-built house with 13 rooms, including storage chambers and baths, besides burials and geometrical designs on the typical ceramic remains, popularly known as the Painted Grey Ware. This ware has generally been associated with the movement of the Aryan speaking peoples into India. This overlap, which, may be tentatively atributed to *circa* 1300 B.C., if not still earlier, is also marked by the prevalence of the practice of burials, probably alongside cremation as twin modes of the disposal of the dead.

Though the co-occurrence of the Painted Grey Ware and late Harappan remains has been evidenced at several sites in Panjab as surface finds, the excavations at Dadheri in District Ludhiana have confirmed the evidence of the interlock between the Painted Grey Ware and late Harappan culture, as at Bhagwanpura in Haryana. The same evidence has been thrown up by the excavations at Manda in the Jammu area of Jammu and Kashmir.

This is only the beginning of a new discovery, and further work in the coming years is likely to narrow the gap and yield more revealing evidence of the mechanics of cultural transformation, and merger between the Harappan culture and its successor.

This may, not however, prove the identification of Aryan or Non-Aryan, beyond controversy.

Piprahwa or Kapilavastu

The 1897 excavation by W.C. Peppe at a brick mound at Piprahwa in District Basti, U.P. not very far from Lumbini, the birth place of the Buddha, in Nepal had revealed the existence of a stupa enshrining some reliquary and relies, including calcined bones, apparently human. These remains were identified on the basis of the Prakrit inscription in Brahmi characters on the lid of one of the stone caskets as being the corporeal remains of Lord Buddha laid to rest by the Sakya brethren. The stupa could, therefore, be identified, on circumstantial grounds, with one of the eight stupas raised originally by the kins men and tribes, who had love Buddha dearly during his life time over his mortal remains after the cremation of the body. The Piprahwa stupa in particular was identified as the stupa of the Sakyas. Logically, therefore, this stupa could not have been very far removed from their capital city, Kapilvastu.

The site was, therefore, subjected to a further excavation by the Archaeological Survey of India from 1970-71 onwards. These excavations have revealed the existence of the interment of other relic caskets and one, in particular, below the level of the brick *stupa* The excavator, Shri K. M. Srivastava of the Archaeological Survey of India, has come to the conclusion that this belonged to the original *stupa*, and the inscribed ones to the time of Asoka, who is credited with opening up seven of the eight *stupas*, not far defiling, but for raising 84,000 *stupas* all over the country with smaller bits of the Buddha's relics with a view to popularizing the cult of the *stupa*.

As though to set the seal on the question, the excavators spade brought to light more than 40 circular terracotta sealings, each barely 8 cm. in diameter, bearing an inscription in two lines in the Brahmi script of the 2nd-3rd century A D., which, with its variants, reads *'Om Devaputra Vihare Kapilavastu Bhikshu sanghasa'*, meaning that the objects which carried the seal were meant for the order of monks of Kapilavastu residing in the *Devaputra Vihara* (a monastery that may be attributed to the Kushan King, Kanishka who assumed the title of Devaputra, son of God and was a patron and follower of Buddhism. These sealings were found in the ruins of a later *stupa* of the Kushan period.

This single phenomenon may not prove the identity of Kapilavastu, for, the remains of any city in the neighbourhood have not been exposed as yet, though there is a large number of ancient habitational mounds in the region. The cutting of one of the adjoining mounds at Ganwaria has revealed the existence of two complexes of houses, one with 26 rooms and the other with 21 rooms, but both built around a central courtyard. These are apparently ordinary residences, judged from the everyday objects found in them. They are apparently too small to be identified as palaces, and two large to be recognised as private houses upon the rural scene From their form they could easily have been monasteries, an inference which appears to be the nearest to reality. It is however, significant to record the excavations at Ganwariya have revealed a sequence, in four periods, from the 8th century B C to the 4th century A.D

Is Antichak Vikramasila of old ?

The monastery of Vikramasila, hallowed with the memory of Atisa Dipankara, the Indian monk who later migrated to Tibet and spread the tenet of the Buddha in the mountainous land, seems to have been exposed to view at last by the Archaeological Survey of India at Antichak in District Bhagalpur, Bihar. The large monastic establishment, which seems to have been constructed in the 9th century A D , consists of a central *stupa* with a shrine for the Buddha on all the cardinal sides surrounded by a square courtyard, lined by a series of 52 monastic cells on each side, except on the north, which was pierced through the centre by a massive gateway No direct evidence to connect it with Vikramasila has, however, been forthcoming The monastic establishment seems to have been destroyed by a vandalistic act of incendiarism early in the 13th century as evidint from the ample remains of ashas, burnt earth, and broken pits of sculpture.

The search for the historicity of the Ramayana and archaeological remains of the period.

The excavations at Ayodhya (Faizabad) in Uttar Pradesh have established that the antiquity of the site goes to the early seventh century B.C. This is disturbing to the traditionalist and poses a challenge to the prevailing ideas of the hoary antiquity of the events of the Ramayana

The problem has not been alleviated by the still more disturbing discovery by excavation at Srinagaverpur, District Allahabad, that the site where Rama, Sita and Lakshmana crossed the Ganga on their way into the sylvan exile was no earlier than 600 B.C

New Ashokan Inscriptions.

The Prehistory Branch of the Archaeological Survey of India, while looking for the remains of the prehistoric man on the southern fringes of the Vindhyas to the north of the Narmada and to the south of Bhopal chanced upon the discovery of a number of natural caverns at a place called Panguvia in the Budhni Tehsil of District Sheore in Madhya Pradesh. The most exciting discovery was of an Asokan inscription, a minor rock edict, a copy of the version of the edict of Asoka at Siddapur, near Brahmagiri, in District Bellary, Karnataka (South India), engraved on the face of the rock in one of the rock shelters called Saru-Maru near Pangurana This single inscription could not have been engraved in isolation It was found to be in the midst of a Buddhist monastic establishment with rubble-built *stupas in* the neighbourhood. The face of the rock bears paintings as well, the date of which is yet to be determined.

The discovery has given rise to certain inferences. It is not unlikely that the practice of cutting well-defined caves for the residence of the monks of the Buddhist and Jain faiths which became very popular in India from the 3rd century B.C. onwards, particularly Western India may have owed itself to the older practice of cave dwelling, away from the humdrum of cities, and townships That this area was probably an important Buddhist establishment is indicated by the name of *Buddhni*, the nearest town, which may be a shortening of the word *Buddhanivasa* meaning the "Abode of Buddha or Buddhist monks" The existence of a village with the name *Dipakhera*, not far from the site, suggests that the monastic community was probably provided with oil for their lamps by the village, which still presumably echoes its old function as a village for lamps, because *Dipa* stand for lamps, and *Khera* for a village

Regardless of the accuracy or otherwise of the inferances, there is no doubt that these discoveries have provided the archaeologists with ample grist for their mills.

Two more minor rock inscriptions of Asoka have been found at Niltur and Udegram, in District Bellary in Kornataka It is interesting to record that the inscription at Nitlur give the name of the Mauryan emperor.

Mural Painting at Nalanda.

One of the most fascinating discoveries made in recent years by the Archaeological Survey of India is the discovery of the remains of mural paintings on the stone facade of the plinth of a large Buddhist temple at Nalanda in Bihar. This came as a sequel to the discovery in 1974 of a stone inscription, fixed into the brick additions of the temple, of 8th century A.D. The paintings show a white elephant with a border of flowers at the top and seem to cover an inscription of about the 8th century, reading *'Prachanda hasti'* in the Brahmi script. The painting, which seems to be later than the inscription, is obviously related to it and possibly stands for the Buddha himself, as conceived of as a white elephant. Since the site was desecrated in the beginning of the 13th century, the painting can, circumstantially, be dated between the 8th and 13th centuries This also represents a very early and so far the only example of mural paintings, probably of the Pala period in Bihar The excavations are yet to be completed and it is likely that further work would reveal the possibility of its connection with the theme of the taming of Nalagiri the maddened and infuriated elephant, let loose by Buddha's own cousin, Devdatta, against him out of jealousy

It is sad to reflect in the context of these discoveries that the person who gave a new life to the archaeological activity in this land, namely, Sir Mortimer Wheeler, passed away in London on the 22nd July, 1976 He had retained till the last day of his life his curiousity ever on the alert to know of the latest archaeological discoveries in this distant land. It is only to be hoped that the less technical writers of history would weave the new discoveries into the chess-board of Indian history, and bring them to the doorstep of the common man ever as Wheeler had done by coming down from the pedestal of a high and mighty scholar and dignitary and descending to the plain level of the man in the street as an expositor, with wit and humour and with vim and vigour, of the most ordinary yet unexplained facts of life from the pots and pans and the multitudinous disjecta of the archaeologists. □

19 DPD/78- 2

Changing role of museums in India

V. P. Dwivedi
Deputy Keeper
National Museum
New Delhi



Astronomical Instrument at the Birla Planetarium, Calcutta

THE FIRST MUSEUMS on record were the temples in Egypt and Greece which held the treasures of the community, many of the objects placed there to propitiate the gods. Indian temples, too, received offerings from the devotees which were treasured there and were brought out occasionally for 'darshana' on festive occasions. The modern European museums came into being after the French Revolution, when much privately owned art was nationalised and palaces were converted into public repositories of art. Similar development took place in India after Independence where many Maharajas converted their palaces into public museums. At the beginning of the century, artists all over the world issued manifestos against the museums, calling for the destruction of these 'cemetries' which touched all art with the chill hand of death. However, the museums have reasserted their vitality—displaying the large modern paintings and sculptures that have become too big for private collections and taking on expanded educational roles.

In India we find that though many new museums have come up in the recent past as an institution the museum has yet to gain social recognition in the society. This neglect may be attributed to the lack of funds and personnel at the disposal of the museums. A solid programme to attract the public to museums has also been a desideratum.

Furthermore, the rural areas where the bulk of Indian population reside, remain untouched with the museum movement. For rural folk the museum still remain *ajaibghara* or *jadughara*. Paradoxically, it is the Indian village which needs the museum much more than the cities. This is because of the fact that the village is no longer the old village, contented and self-sufficient, but it is loosing its character in trying to imitate the half-baked Indian citydwellers. Gone are the shinning brass and copper water-storage jars and attractive lamps with the introduction of water taps and electricity in the villages. An institution like museum is badly needed in Indian rural sector

to restore their faith in their glorious past when the village was a self-sufficient unit, and to acquaint them with their potentialities. Even in cities, where museums have already been in existence for several decades, the habit of visiting museum with family has yet to develop. The museums are visited only when an out-station-guest visits the city. To win over these problems concerted efforts will have to be made on several fronts.

The School curriculam

As the problem is quite deep rooted, we will have to tackle it from the very root. To begin with art, archaeology, ethnography, natural history objects belonging to different museums will have to be incorporated in the school text-books mentioning the names of the institutions prominently to encourage the readers to come to museums regularly. The joy of a child to see the actual Mohenjo-daro bronze dancing girl, which is illustrated in his book, at the National Museum galleries is something divine and is to be seen to believe. Lessons describing the National Museum, New Delhi, Indian Museum, Calcutta or State Museum, Lucknow/Jaipur or the local museum should find place in school text-books. Similarly the teacher's training programme should make it obligatory on the teachers to visit the nearest museum and separate marks allotted to it. College and university books should also have museum objects illustrated in them and courses like Ancient history, Archaeology or Indology should make it compulsory to visit museums. The students should be asked to write essays on some object of the nearby museum The teachers should invite the Curators to speak to their students. Same thing can be true of Physics, Botony, Zoology, Geology or any other such subjects.

The School museum

Talking of the school text-books, etc. make us turn our attention towards establishing more and more school museums. Little attention has been paid to this institution which is full of potentialities and at the same time involve least expenses. These museums are made up of materials used in class room teaching which in many cases are collected, classified and exhibited by students, with (or without) the help of a teacher. The museum activities will not only be an extra curricular function of the class or the school but will inculcate a scientific outlook among the students and teachers. Such a museum can have art, archaeology, natural history, hygiene and personalia sections in different class-rooms, and try to bring out the characteristic features of the locality in these respects. These museums permit visual instructions and experimentation with actual museum specimens, and stimulate school's co-operation and participation in the cultural activities In fact such museums can form, in the absence of larger museums in the community, a nucleus from which the class-room museum can grow beyond the limits of the school to serve ultimately the community and the region as a whole. Above all, these activities do not need any extra funds. Schools can well afford it within their own means. Teachers of that particular subject, history, botony, zoology, etc, can easily serve the museum as its Curator, co-ordinated by the principal

The U.P. Directorate of Education attempted such an experiment long ago by establishing four Educational museums at Deoria, Etawah, Muzaffar Nagar and Bulandshahar but alas ! the whole scheme has been wrongly managed. These institutions should have been placed under the Principal of the Government Higher Secondary Schools and not under the Inspector of Schools who is quite often on tour and has no time to spare for museums. Although still continuing they hardly serve the purpose for which they were established and need to be put to proper use.

Similar museums can easily be established in colleges and universities. The only difference will be that while the school museum will be limited in its scope to its own locality or neighbourhood, the college/university museum will have to be a little more broad-based, being regional in its approach.

The rural museum

Most of the school museums will be based in the rural areas and can thus be included in the category of the rural museums. But besides these, the following programme, involving the minimum of expenditure, can be immensely rewarding, if properly implemented If possible, a group of these school museums should have a unit to show films on cultural heritage, simple scientific inventions, etc, as films are easy to understand and have greater impact on masses.

Village Agricultural museum

Almost every village of some means has a 'Panchayat Ghar' or a community centre. A mobile agricultural museum should hold practical demonstrations at these centres showing the uses of the agricultural machine and implements, fertilizers, better seeds, pest control practices and of putting the land to maximum yield. It should also hold annual (or seasonal) competitions for the best yield and prize winning objects should be preserved in the local 'Panchayat Ghar' which should be equipped with some wall show cases (almirah) to house these objects. Outstanding products should be taken round to neighbouring villages. This would encourage the villagers for a healthy competition and ultimately result in more and better yield of grains, vegetables, etc H P Agricultural University, Palampur, is the only institution to have established such a museum. Pant Nagar University is also doing something But many more such museums in all parts of the country and within easy reach of the public are needed to cater wider sections of the public

Mobile Science and Technology Museum

As science and technology museums are expensive to establish and equipment hard to find, it is suggested that mobile units, like the one established by the Birla Industrial and Technological Museum, Calcutta, be formed to cater to the needs of a group of villages. These should have the following basic exhibits which the villager will be interested to know : electricity, water-resources, power, mineral and other natural resources, motors, loco-motives, etc. Annual competition should be arranged among the school children for scientific inventions and best exhibits should be displayed in the school museum. Prominent display of the names of the winners may inculcate a healthy competition and bring forward budding scientists whom the country badly needs. Mobile science and technology museum should pay visit to the village schools ; 'Panchayat ghars', weekly bazars, etc. and the guides should explain the exhibits in local dialects to carry its message across the masses.

Urban museums

Museums in the big Indian cities are already there and need only to be turned up to meet the needs of the fast growing urban community. The existing

museums in big cities will have to be reorganised and the cities without them, provided with museums. One of the category of our heritage which need immediate rescue operations is folk-lore Old generation people can still narrate folk-songs, stories, etc. which will otherwise be lost fore ever.

Private support

In this connection it will be worthwhile to mention that any community, village or city, should not always look to the Government for opening new museums. It is the people who have to come forward. The Urban community has better potentialities—an educated clientale as well as industrialists and other philonthropists. The big industrial houses, some of whom have built sizable art collections in the recent past, can open these to the public Birla has already opened three museums. Let us hope many more will follow. Indirectly the Antiquities Act has provided incentive for opening such museums.

Reorganisation of Museums

Already established urban museums have to reorganise their programme in such a way as to meet the modern challenge. In order to reach larger areas, they ought to have mobile units which should periodically visit schools, community centres, associations, industrial colonies, etc and make people aware of the glorious past and/or recent developments in various fields as the case may be. Schools, colleges, universities, I I T's, etc should be encouraged to open their own small museums displaying plaster-casts, photographes, etc Hobby Clubs at the urban museums, such as painting, clay modelling, doll making, camera club, stamp collecting club, coins-collecting club, etc can be of great success. Similarly science clubs can also be opened.

New Museums

Cities which do not have any museum should be given all possible help by other museums to establish one. Local industrial houses, municipal and other local agencies should also help in it. Only a big multi-purpose museum, with mobile units, can serve a big city. Many Indian cities do not have any museum. The city administration should take up such projects and utilise the effective educational potentialities of the museum.

There is hardly any field in which a museum cannot be opened. In Europe they have Bread Museum, Wine Museum, Book Museum, etc. A book museum, displaying the earliest printed books, if possible printing machines as well, can be quite educative. Such specialised museums can be opened by 'Printers and Publishers Association', as it will be quite beneficial to that community as well.

Epilogue

The future demands that museums should assert their educational value and make their presence felt in the society. Those big museums which can afford should appoint education officers and those which can not afford should take help of school-teachers or voluntary guides. 'Friends of Museum society' should be organised to help museums in their work. Occasional cultural performances at the museum auditoriums or in open air and organisation of Hobby Clubs will also make a museum better known in the community. Opening of school and village museums, as envisaged earlier, will make them a useful institution with educational aims. In this age of democracy where number counts so much, museums will have to multiply themselves to gain public sympathy and for that they will have to show their 'usefulness to the society' which is possible if above programme is implemented thoroughly. □

Indian Museums and Public Relations

Sadashiv Gorakshkar,
Director, Prince of Wales Museum, Bombay

ONCE, WHILE addressing the annual conference of the Museum Association of India the famous British Archaeologist, Sir Mortimer Wheelar remarked that our museums were intended to "tell the outsiders about India and the Indians about themselves".

In other words it means that we are no longer harbouring the Victorian concept of a museum viz., "As a place to dry your wet clothes on a Sunday afternoon".

Museums without walls

Historiography, by and large, is not our habit, hough Pandas at various pilgrimage places have excelent records of many families. No such records, thereore, exist of many an interesting institutions such as Museums in our country. For their history we have to dig deep into various literary sources of the past. It is often opined that the museums are the gift of western ideology to India and is of course only partially true. Through our literature of the ancient past and even the vestiges of fresco paintings, both ancient and medieval, we know that the concept of an art gallery in India is an old one. Some of these *Rang Mahals* or picture galleries were used as reception halls for special visitors. Apart from leaving behind the marvels of contemporary art traditions, these frescoes, be they ancient or medieavel, tell us how the idea of chambers of art was a common feature in our country. And if the general idea of a museum viz. an institution or a repository of our culture, traditions and artefacts is accepted then are not India's temples and monuments "Museums without walls".

Museums today have been variously defined from a simple definition as the "Temples of the Muses" to an elaborate one given by the International Council of Museums as, "any permanent establishment set up for the purpose of preserving, studying, enhancing by various means and, in particular of exhibiting to the public for its delectation and instruction—artistic, historical, scientific and technological collections". This would briefly indicate the wide range of institutions of cognate nature now included within the orbit of this definition.

19 DPD/78—3

History of Indian Museums

The first ever museum in India was developed in the year 1796 only 40 years after the famous British Museum was founded. It was a result of the lead taken by the Asiatic Society of Bengal which wanted to house the collections it had acquired over the years. One of its members, Dr. Nathaniel Wallich volunteered to hand over duplicates from his collection provided these were housed in a suitable building and that was how the first museum was organized at Calcutta. Today it is one of the three National Museums of our country. The building in which it is now housed was constructed in the year 1875.

In subsequent years a number of rulers of the former princely states, who had during their tours collected a lot of foreign junks as tourist souveniers considered it worth-while to house them in museums. One among them is the Maharaja of Baroda whose museum even today is amongst the foremost museums in the country.

With the development of the Archaeological Survey under Sir John Marshall seven museums were developed between 1903 and 1913 at various sites of archaeological importance. In subsequent years such site museums became a prominent feature and an important activity of the Archaeological Survey of India. Museums at Nalanda, Sarnath, Lothal, Nagarjunakonda are some of the prominent ones.

Statistically speaking, therefore, by 1857 there were twelve museums in India. By 1900 the number rose to twentysix. And when Markham and Hargreaves compiled in the year 1936, the first ever systematic report on the museum movement in India, the number of museums had already reached an impressive 105 Of course this figure includes those that later went to Pakistan. But today there are approximately 300 museums in India. And yet this position is far from satisfactory. Even today, after a lapse of almost 40 years, the remarks of Markham and Hargreaves very aptly apply. They have stated, "In fact with the exception of the most backward countries of the world, there is not an area where museums count for so little, are so meagerly supported, or are so few and far between"

Scope and Function of museums

In the context, we are naturally confronted with two problems :

1. Why inspite of such abundance of material reflecting our culture there are only very few museums ?
2. Why this apathy both official and public towards it ?

To understand these we have to consider the scope and function of museums.

Museums are the repositories of the cultural remains of bygone days and from that view point are directly related to human achievements. In other words, therefore, such remains are nothing but concrete evidence of our story of progress. And moreover human culture is accumulation of past experience which instead of repeating we keep on improving.

By its very nature, therefore, a museum is a unique institution directly linked with culture and consequently with education. The function of any museum can be broadly defined as, "To collect, to preserve and to educate".

But it is not as simple as it reads. It is true that to collect and conserve material for research, to be able to add to the knowledge of man and his environment is essentially a major contribution towards education and is the function of a museum. An inevitable corollary to this is the preserving of this material for posterity. This is indeed a very great responsibility in as much as the various concepts, theories and principles which may have been taken for granted today may have to be modified tomorrow on the basis of a compartive evaluation and great care is required in preserving this material. Inversely, it is only a museum which is the safest place to perform this duty. Naturally the museum is a repository of material of various types not only of the past and the present but of a vast geographical area. The material, for instance, could vary from prehistoric implements to highly decorative handicrafts of the modern age.There could be other material from the 2nd century B.C. to the 12th century A D covering an expanse of over a thousand and five hundred years. In fact there could be anything which might be the vestige of a bygone era which has something to communicate.

And that is why today museums have been accepted as holding a unique position in our educational system. They no more abate idle curiosities of the visitors, but have become indispensable part of a social life, a centre which will help our citizens irrespective of whether townsmen or villagers and are at varying degrees of literacy, intelligence and trade, to understand and appreciate their history and culture, their folklore, their tradition, their arts and crafts The spirit of wonderment that is aroused and stimulated by seeing the objects if properly channelized can certainly prove fruitful in creating a better entent on the part of the visitor.

Need for Public Relations

But, howsoever, an institution may be a useful one it always requires an effective department which in modern parlance is called the Public Relations Department And it is here that agencies for mass communication such as news-papers, radio/T.V. and even the Tourism Department play a vital role.

Many of our Museums often face such uncharitable situation For instance a model of the "Tower of Silence" of the Parsis is represented to symbolise the entire collection of art and archaeology in the Prince of Wales Museum for the tourists who are brought in conducted tours In fact it is on such occasions that we expect the tourism agency to act as our true "P R." men by not painting such a misconceived picture of our cultural institutions

A pertinent question is why do overseas visitors come to our country and what do they expect to see ? It is a common experience that most of them have done their home work and are desirous of seeing particular objects Very infrequently the local host is totally unaware of that item. As has been rightly remarked, they certainly do not come "merely to tan their skin or bask in our sun". Our internal problems or our five star hotels do not lure them. And of course they do not remain static in one place.

Does it not speak of their expectations ? Today this urge is not restricted only to overseas visitors There is developing consciousness within the country itself. The responsibility of satisfying their urge is increasingly felt by Museums and similar institutions This is an excellent opportunity both to expand the outlook of people in India on the outside world and to enlighten foreigners on the realities of India. Today

many events have brought a number of world problems together having political, economic, social and cultural repurcussions.

The two questions posed earlier arise in this context. The answer to the first question lies in how we answer the second question viz. why this apathy towards museums. By apathy we do not mean lack of intention to visit a Museum but the problems faced by Museums from the public and concerned officials.

Then why in spite of such a potential museums are lacking the support which they badly need? Is it because of their very introvert outlook. It has to be boldly admitted that the lack of response is reciprocal. Even today many of our Curators have the idea that the museum is the haunt of scholars alone, and hence are oblivious to the presence of the common man visiting them. Since this is the attitude the museums cease to have any public utility. Can we then justify our demands for a public support?

In the case of institutions like museums, the voluntary and spontaneous response from the public would depend entirely on justifying their usefulness which in turn rests upon how the museums can render its collections interesting, attractive and educative. On this would depend the measure of publicity which is vital for public support. It depends on how a Curator can build up a successful liasion with the press and other publicity media such as the radio, television, etc. A consistent public awareness gains for the museum much more appreciation than what it otherwise can.

The issue does not rest merely at the aroused interest unless a certain amount of follow up is done. Truly said, interest like any emotion is shortlived unless it is nurtured into a sentiment. In its turn sentiment is a result of some degree of involvement either deliberate or accidental. Even a casual visitor then becomes the museums best P R. man The best example is that of the Salar Jung Museum at Hyderabad. The spirit of wonderment that it creates makes an abiding impression on the visitor's mind.

This brings us to our first question viz., why in spite of such wealth of material about our own country do we have so few Museums.

In India Museums uptill now have been considered a responsibility of the Government and barring a few instances such as the Raja Dinkar Kelkar Museum in Pune there have not been attempts at building up collections It would be desirable to encourage village schools and other bodies to commence this activity with a local bias and allow it to grow. This will not only help develop consciousness about ourselves but in the wake of smuggling of antiquities serve as an effective antedote. This will indeed help answer our other question viz. about the apathy of people. A sentimental involvement in ones own efforts would go a long way in respecting efforts of others and would lead to exchange of ideas as well.

Official apathy is another major problem faced by many Museum Officers. Not infrequently there is lack of sympathy for the Museum Curator or his projects. It also happens that such support is available provided the efforts are result oriented. Nevertheless very often the Curators face embrassment when adequate finances are not available. More often the financial need of Museums has been relegated to the background.

To a large extent, the situation in which Indian museums have been placed at present has arisen due to lack of proper publicity of our museums. In contrast American museums which are in the forefront today realised the need at the turn of the century and made efforts in this direction. As a result there has developed in that country a certain amount of public involvement which places an onus on the museums to make them both extrovert and approachable.

There are many areas where such agencies of mass communication can be of great help. Some of the programmes which the British Museums Association discussed could be quoted with relevance .

(1) Production of documentary films on museums for screenig outside the country.
(2) Organised visits by journalists and subsequent coverage in the press.
(3) Publication of a well illustrated directory of museums; the directory recently published by ICOM may serve as a model.

All that we expect from such spokesmen is an understanding of our museums as temples of muses. It is a unique institution where one gathers information while enjoying a feeling of relaxation from the humdrum of daily life. On the other hand it is for the museum too to realise that since they lack independent machinery to boost up their image through effective public relations, they should encourage voluntary agencies to speak on their behalf. In their turn such voluntary agencies too should choose to restrict themselves to their role only as the "P. R. Man".

Perhaps in achieving a better entente we feel that agencies such as the Museums Association of India can play a vital role. We have not tried it so far, but why delay?

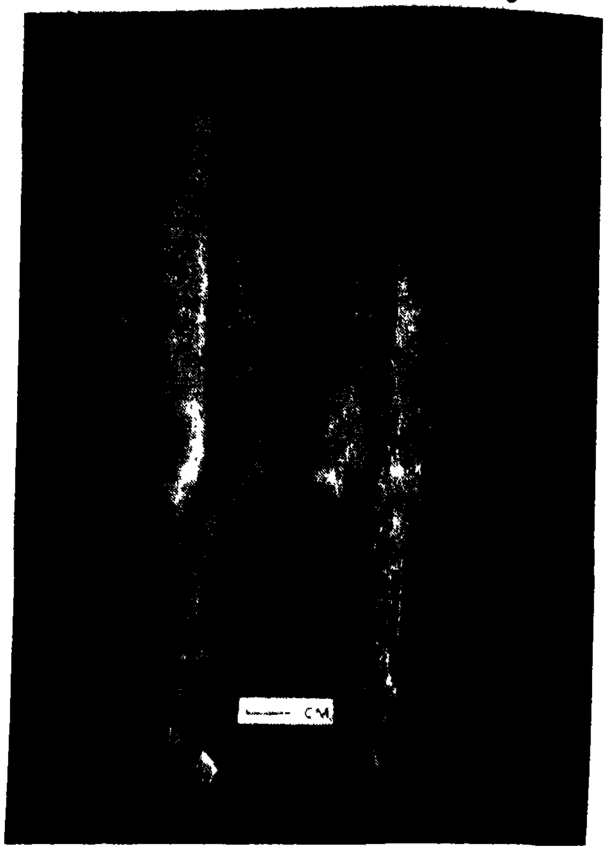
Antiques and The Antiquities Act

B. K. Thaper

Director-General, Archaeological Survey of India

INDIA IS BLESSED with a very rich cultural heritage extending back to the third millennium B C. This heritage apart from its antiquity, is marked by a diversity which invests it with a uniqueness. Our heritage is not only represented in architectural remains like palaces, forts, temples, mosques, churches, tombs, rock-cut caves, stupas, monasteries and the like but also in various crafts like sculptures in all media, paintings both mural and on paper, coins, textiles, household objects like pottery and terracotta figurines and manuscripts. With a view to preserving this heritage in its pristine glory it is our bounden duty to save it from damage, especially, clandestine activities relating to illicit export and transfer of ownership. This responsibility, formidable as it appears, entails proper legislation.

In India it was only in 1947 that an Act, called the Antiquities (Export Control) Act, 1947 was enacted. During the course of its operation, its provisions were found to be inadequate to deal with the growing menace of pilferage of antiquities and the clandestine export. This Act did not provide for any control on the internal trade in antiquities nor for the registration of antiquities and art objects in the possession of private collectors or institutions, with the result there was no record of the antiquarian wealth of the country. Furthermore, manuscripts which were less than 100 years old, were outside the purview of this Act. The Government of India, therefore, decided to frame a comprehensive legislation known as the Antiquities and Art Treasurers Act, 1972, which received the assent of the President in September 1972. After completing all the formalities namely framing of Rules and setting up of the implementation machinery, this Act has now been put in to force with effect from April 5, 1976. The objectives of this Act are fourfold· (i) to regulate the export trade in antiquities and art treasures; (ii) to provide for the prevention of smuggling of and fraudulent dealings in antiquities; (iii) to provide for the complusory acquisition of antiquities and art treasures for preservation in public places; (iv) to provide for certain other matters connected therewith or incidental or ancillary thereto. The term antiquity has been comprehensively defined to include objects which have been in existence for not less than 75 years. The term art treasures, has been defined to include any human work of art, not being an antiquity, declared by the Central Government by notification in the official gazette to be an Art Treasure for the purposes of this Act, having regard to its artistic value.



Two sides of a copper dagger blade, dated C 500 B.C. Found in Chandoli of the Deccan

Business in antiquities

Under this Act the export of antiquities and art treasures will be done only by the Central Government or any authority or agency authorised by it. All persons intending to carry out business of selling or offering to sell antiquities have to obtain a licence. Every holder of a licence is required to maintain records, photographs and registration of the objects which he is required to make available for inspection by the Licensing Officer appointed by the Government To ensure the integrity of the dealers, the Act provides that no licence shall be granted to the applicant if he is convicted of an offence punishable in the Antiquities (Export Control) Act, 1947 unless a perod of 10 years has elapsed since the date of the conviction.

The Government, however, reserves the right either to take over the business of selling or offering for sale of antiquities itself or authorise any other agency for doing this work.

The Act also enjoins upon every person who owns controls or is in possession of any antiquity to register it before the Registering Officer. Whenever any person transfers the ownership, control or possession of any antiquity, he is required to intimate within a specified period and in a prscribed form the fact of such transfer to the Registering Officer. Museums and Educational or Cultural institutions, controlled or managed by the Government or any local authority or by any such body as the Central Government may, approve for this purpose by general or special order are exempt from such registration.

Lastly, the Act provides for the compulsory acquisition of the antiquities and art treasures, if in the opinion of the Central Government it is found desirable to preserve any antiquity or art treasure in a public place. This compulsory acquisition is, however, subject to adequate compensation determined in accordance with the principles laid in the Act.

It is hoped that with these provisions of the present Act, we shall not only be putting an effective check on the smuggling and illegal export of antiquities, but shall also be in a position to document the cultural wealth of the country. In this context it may be emphasised that if we have to take advantage of the UNESCO Convention for preventing illicit import, export and transfer of ownership of cultural property and want to recover our art objects, clandestinely taken away from our country, documentation of the whole range of our cultural wealth is the first desideratum The present Act fulfils this laudable objective. □

Delay the First

Space the Second

Stop the Third

Technological Studies in Archaeological Research

K. T. HEGDE

Professor of Environment Archaeology, Deptt. of Ancient History, M. S. University, Baroda

TECHNOLOGICAL examination of early human artefacts and other archaeological materials is almost as old as the discipline of archaeology itself. A great deal of archaeological classification of material remains of the past, is based on their technological examination. Even the Three Age System of classification of Christian Jurgensen Thompsen (1836), was based on technological study of archaeological materials. In recent years, because of their immense potential technological studies have become more vaulable to archaeological research. Though recently started, and carried out by only a few scientists, technological studies in archaeological materials have made valuable contributions to Indian archaeology.

Ancient Indian Copper Metallurgy

In India copper object have a great antiquity. The earliest copper objects come from the Chalcolithic cultures which used copper and stone as rawmaterials for making tools and implements. The Indian Chalcolithic cultures have a wide distribution, both in time and space. They date from the mid-centuries of the third millennium B.C. to the second or first century of the second millennium B.C. In space they are spread over the Punjab, Sindh, Haryana, Rajasthan, Gujarat, Madhya Pradesh and the Deccan. Some of the Chalcolithic communities lived in large urban settlements like Harappa, Mohenjodaro or Kalibangan, some others lived in small settlements like those of Navdatoli, Jokha, Chandoli etc. All these communities used cutting tools and ornaments made of copper.

Until 1963 however, it has not known where these copper objects came from. Shapes of some of these ancient Indian copper objects are similar to the objects excavated at Susa and other contemporary Persian sites. On the basis of this evidence Sir John Marshall, the excavator of Harappa and Mohenjodaro observed that, the Indian copper artefacts were probably imported from Persia.

In 1963, Professor H. D. Sankalia of the Deccan College Poona, leading an excavation of the Chalcolithic site at Ahar near Udaipur in Rajasthan, discovered caps of semi-fused glass like material together with copper tools. He sent these materials to the Department of Archaeology of the M. S. University of Baroda for their analysis and technical examination. On analysis, the glass like material was found to be slag produced in a copper smelting process.

To confirm this hypothesis, it was necessary to link the copper artefacts with Indian copper ore deposits and find the source of the metal. Ancient metal objects contain a large number of elements, some of them in minute traces, as impurities. These could not have been deliberately fused into the metal. The impurities must have got into the metal from the ore from which the metal was extracted. These impurities, therefore, can serve as clues in tracing the source of the metal. Impurities in a metal can be determined by a spectrometric analysis of a sample cut from the metal. This analysis is very simple. The sample is exposed to a light source and the spectrum it emits is recorded on a photographic plate and analysed for its composition. The composition reveals the impurity pattern of the sample. The impurity patterns of the metal samples can be compared with the impurity patterns of the likely ore samples and the source of the metal can be determined.

Close to the areas inhabited by the Chalcolithic communities, extensive copper ore deposits are located in the Aravalli Hills. These deposits are also dotted with deep shafts and large slag heaps, the marks of ancient mining and metallurgical activities in this area. Aravalli copper ore deposits were therefore considered the likely source used by the Chalcolithic metal smelters. Spectrometric studies were therefore carried out on these ore samples and on metal samples carried from representative artifacts from the Chalcolithic settlements at Mitathal in the Punjab, Ahar and Bagor in Rajasthan, Somnath, Langhnaj and Jokha in Gujarat, Navadatoli and Madhya Pradesh and Chandoli in the Deccan. Impurity patterns of these artifacts and the Ore samples were found to be in close agreement. From this study we may observe that the Aravalli copper ore deposits were exploited as early as the Chalcolithic period.

At this stage it was interesting to know more about the metallurgy of the period, the purity of the metal extracted, whether it was alloyed and how the useful objects were fabricated. Analysis of artefact samples indicated that the copper metal extracted was 96 to 98 per cent pure. This purity is equivalent to that of the present day 'blister copper', produced after Bessemerisation of the matters. This observation is also significant. It shows that in the Chalcolithic period an advanced stage in extractive metallurgy was reached and maintained. Some of the objects were made of bronze, with a tin content of 3 to 12 per cent. Bronze is much harder and stronger than copper. It also gives a harder keener and more enduring cutting edge. Besides, alloying helps in casting and forging. So the Chalcolithic copper smiths renew the advantage of alloying copper with tin. But the fact that there were only a small number of bronze objects suggests that tin was probably scarce.

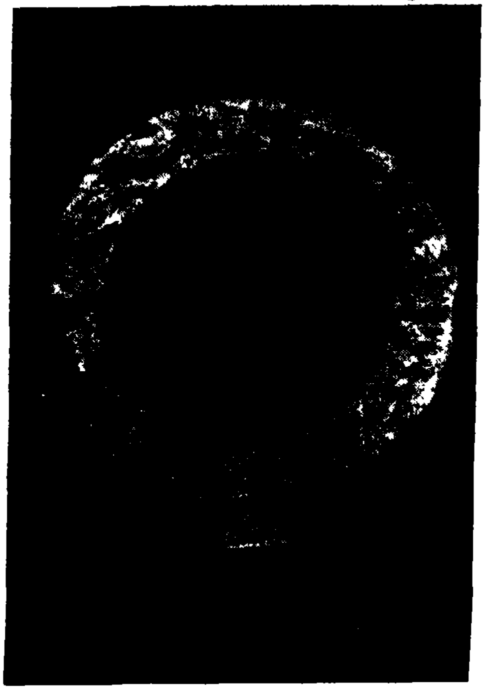
Metallographic examination of artifact samples revealed that the axes were cast. But their cutting edges were not entirely a feature of the casting moulds. The edges were bevelled by hot and cold forging. Some of the axes were cast in unventilated moulds. Axes recovered from Somnath and Navdatoli were however cast in well ventilated moulds. Proper ventilation is essential for good casting of copper and bronze. Some of the objects were produced entirely by forging. A chisel recovered from Navdatoli and a knife recovered from Langhnaj were found to be shaped by hot forging above 500°c, the recrystallisation temperature of copper.

Iron Metallurgy

Ever since the Greek historian Herodotus recorded the use of iron and, Alexander the Great invaded the country in 326 B.C. India has been renowned for the quality of her iron. But how this iron was produced is a subject on which, until 1968, there had been little information. The excavation of an Early Historic iron-smelting site near Dhatwa, a village in the Tapi valley in Surat District of Gujarat State, by Professor R. N. Mehta, in 1968, and the ensuing investigations into the metallurgical technology of the site at the Depart-

ment of Archaeology of the M. S. University of Baroda, have shed a ray of welcome new light on the problem.

The excavation revealed evidence of an iron smelting industry in the form of iron objects, heaps of iron metallurgical slag and lumps of iron ore. These materials occured in association with crude Black and Red Ware, lead ear-studs, bone points and glass beads, all of which belong to the Early Historic period in the mid centuries of the first millennium B.C



A copper bangle that adorned the fore-arm of a child, dated to C2000 B C.

Technical study of this metallurgical site consisted of spectrometric and chemical analysis of samples cut from artefacts, slag and ore and, hardness and metallographic examination of metal samples The study revealed some interesting facts about this ancient Indian iron metallurgy They are . (1) Dhatwa iron smelters exploited the locally available limonite ore (2) This they roasted to convert it into haematite Roasting of the ore increases its iron oxide content weight per weight and renders it more porous, fragile and hence easier to crush and more suitable for smelting. (3) The crushed ore was mixed with charcoal and fed into small, claylined crucible shaped shaft furances into which air was forced with the help of bellows (4) The small bloom that separated out was 99 84 per cent pure iron. It is like the present day wrought iron. But wrought iron is soft It was therefore of interest to discover how the hard implements such as the hoe, chisel and knife were manufactured (5) Hardness tests and metallographic examination of the artefact samples revealed that their metal was harder than the wrought iron in the interior of the implements And near the lower and upper surfaces of the implements, the metal was found to be much harder Also in the interior of the implements the metal had a laminated structure These are interesting indications They tell us that the implements were fabricated in three or four stages First, the bloom was heated to redness in an open hearth and the red hot metal was forged on an anvil close to the hearth In the forging process, the adhering slag separated out from the bloom and simultaneously the surface of the metal was carburised and case hardened. In the second stage, the bloom was further heated to redness and beaten to make it into a thin strip of metal. In the third stage the red hot strips were joined laterally one by one by forge-welding to build up a thick mass of iron In the fourth stage this forged to shape it into an implement The laminated structure within the implements indicates the lines of the lateral forge-welding of several thin strips of the metal.

Technical studies on the Kshatrapa lead coins have enabled us to trace the source of the lead metal to the galena deposits near Zawar in the Aravalli Hills and show that the Indian lead smelting industry was atleast sixteen centuries old Studies of Vishnukundin King's coins have revealed two hitherto unknown coinage alloys and a new technique of minting coins

Ancient Indian Ceramics

Ancient Indian pottery relics are often the only evidence of the past human habitation at a site But they are very valuable relics They help us in establishing cultural sequence at the site, and throw light on the the food habits of the people, their religious and social customs and the technological advancement attained by them. Among the numerous pottery industries of ancient India, the manufacture of the Northern Black Polished Ware, popularly referred to as the NBP Ware is considered to be the highest achievement of the Indian pottery. According to Sir Mortimer Wheeler, it is a deluxe ware, as distinctive in the Indian subcontinent as is terra sigillata on European sites. As this pottery is considered to be the hallmark of the Early Historic period in northern India it is of considerable significance to the study of Indian archaeology It is wheel made, normally thin with a steel like quality. It has a grey core and commonly coal black lustrous surface The ware has been recovered from several sites They indicate that the ware was mainly manufactured in the Ganga plain, but it had also moved far and wide from Somnath in the Saurashtra coast to Bangara in Bangala Desh, Charsada near Peshawar to Amravati, the famous Buddhist site in the south There are now a number of radiocarbon dates for the NBP ware levels They suggest a time span of 500 years, from C 500 B C to C 100 B C Its importance in archaeology and in the study of ceramic technology notwithstanding, until 1962, the factors contributing for its black colour and the lusture of its surface were not known

Study of the NBP ware was the first technical study that the Department of Archaeology of the M. S University of Baroda carried out Chemical analysis of the ware revealed a high percentage of sodium and iron in the surface of the ware When a sherd of the ware was heated in an open crucible, the black colour of the ware, slowly turned first yellow, then orange and finally red When a small fragment of the black slip of the ware was held near a magnet, it was attracted by the magnet while, a similar fragment from the core of the sherd was found to be relatively much less magnetic These observations bespeak the components of the lustrous slip on the NBP ware. It was produced by an application of liquid clay, quite similar to that employed in the preparation of the body of the ware which in addition contained finely ground red ochre (haematite) and an alkaline substance. This alkaline substance

was traced to *saijimatti*. *Saijimatti* is a natural alkaline efflorescence profusely found in the Ganga plain which, as noted above, is also the central zone of manfacture of the NBP ware. Red ochre in such alkalined clay liquids, used as surface dressing on pottery, gives a black lustrous surface when the pottery is baked under reducing condition, on account of reaction taking place within the reducing atmosphere of the sealed saggar

It is opaque, isometric and black with metallic lustre in reflected light. The effect of alkali is reduction in vitrification temperature of the clay. Alkali combines with silica in the clay to fuse it at low a temperature as 700°c. It acts like flux. The liquid so formed does not crystallise on cooling. Instead, in forms an amorphous glass like substance This imparts the NBP ware its glo-osy, lustrous surface. An election microscopic study of the NBP ware surface confirmed the above observations. The electron micrograph revealed crystals of magneuite in a background of amorphous structureless glass like substance.

The slip on the NBP ware has a tendency to crackle. This shows that the slip was applied on baked clay. The wares were first backed at about 700°c and backed again at 700°c to 800°c, with the slip on in the reducing atmosphere, in a sealed saggar. The high content of sodium in the slip imports it a higher coefficient of mal expansion than the body, which results in its craz-crazing. Using ground red ochre and saijimatti in clay. We have been able to synthesise the NBP ware silp in the laboratory Similarly technical studies on the Painted Grey ware and Black sliped ware, the two other important potteries of the Ganga-Yamuna doab, have revealed the technique of their manufacture.

The main aim of archaeology is to discover ancient materials and study them, in order to throw as much light on their makers and users as possible. The few technical studies illustrated above show how valuable these studies are to archaeological research.

Museum Training Programmes in India

Dr. V.H. Bedekar

Department of Museology, M.S. University, Baroda-2

THE CONCEPT of museum has undergone tremendous change in the recent years particularly after the World War II. When the European museums were reopened to the public and their treasures meaningfully and selectively presented The museums in America were founded to serve as educational institutions The International Museums Office during the time of the League of Nations in the past and later the UNESCO of the UNO contributed a great deal in establishing internationally approved principles and practices of museum service All these developments during the last few decades have accelerated the growth of museum movement in India. Though the number of museums in India is still very small in relation to its population on one hand and the amount of material of cultural and scientific significance, on the other, their collections are growing steadily. As a result they will soon prove adequate to present the full story of Nature and the Man in the Indian subcontinent.

One of the hopeful aspects of museum development is the increasing accent on the diversification of activities and on the specialization of collections. So we find that museum work is planned to serve the needs of different categories of public—children, adults, elderly persons, farmers and industrial workers, rural and urban population, laymen and experts, craftsmen and artists, students and teachers in schools and colleges, in humanities and sciencies The Indian museums are not averse to the use of mass media to reach out the public and offer today more for the instruction and recreation of the lay persons This transformation is the result of the change of attitude on the part of museum workers They would like to turn their institutions into centres of visual, general, non-formal and continuous education It also implies maturе capacity to take all the troubles required to translate their lofty ideals into practice inspite of the acute problems of funds, space, equipment etc

Another development is in the direction of specialisation. Though most museums continue to house collections covering a wide variety of subjects many newly set up institutions tend to devote their resources to special areas Consequently we have now more museums of Natural History, Science and Technology, Textile Rural life, Tribal and Folk arts and Crafts Mountaineering, Forestry and Agriculture, Health and Hygiene etc Even a specialized museum exclusively devoted to Arthropoda has been established in Pune The so called general Museums have also begun identifying such areas of collections as will make them distinguished. Besides the area of collection of objects the museums are also showing greater individuality in their approaches to the work of their interpretation through popular and scientific publications, activities and exhibitions The work of museums have also increased in complexity because of the recently evolved standards in the matter of documentation and conservation

It is not therefore surprising that both the authorities and workers of Indian museums have realized the value of proper training in museum management and techniques. We have made an early beginning in this direction. At present there are six departments of Museology (which is defined as the branch of knowledge concerned with the study of the purposes and organization of museums). University Grants Commission have helped them financially under a scheme to develop museum training at the university level The Central Advisory Board of Museums of the Government of India, the State Advisory Committees, the Museums Association India and the Indian National Committee of the International Council of Museums have shown keen awareness of the problems of museum training in India Their conferences and recomendations have gone a long way in stabilizing the agencies now engaged in the field of museum training The ideal shared by all professionals is to evolve such methods as to train persons who will succeed in developing our museums within our own resources and in the face of peculiar social and technical challenges. The growing complexity

in the aims and functions of our general and specialized museums require persons trained to handle the professional tasks with right understanding and skill and in right spirit. The training programmes in India are becoming aware of the new professional challenges as well as opportunities to develop museums on scientific lines. What is needed is to widen the basis of the existing agencies and make younger people aware of the training facilities so that those who have special talents and aptitude will prepare themselves for museum careers

Not many people know that we were the first country amongst the Commonwealth nations to institute a postgraduate training in Museology at the University level. Now we have six such departments Their specialities are worth discussing in brief.

The Department of Museology in the Faculty of Fine Arts of Maharaja Sayajirao University of Baroda was the first to offer museum training in 1952 in India at the University level. The training in Museum administration and museum techniques led to the postgraduate Diploma in Museology till recently. Now it has instituted a Master's degree in Museology of two years' duration The six papers on Museum Administration, Collection, Documentation, Research, Museum Architecture, Museum Education, Conservation and Preservation and Specialized Museology as well as preparation of a Dissertation to acquaint the student with the basic understanding and skills in museum management at any level The department is a part of an active and progressive faculty of Fine Arts enabling the students to acquaint with the latest techniques and stylistic developments in painting, sculpture, applied and graphic arts as well as art history The training comprises of the general museology and specialization in the organization of either art or science museums The students study museum methods in the local public museums as well as museums of the University departments like those of Archaeology, Botany, Geology etc

Another very old and important centre of museum training is situated in Calcutta which is veritably a city of museums Besides the Indian Museum, the biggest in Asia, there are others like Birla Industrial and Technological Museum, Birla Planetarium, Crafts Museum, Birla Academy of Art and Culture, Botanical and Zoologcal gardens and the Ashutosh Museum of the Calcutta University in which the Department of Museology is situated. The course lays equal emphasis on museology and museum subjects like art, archaeology, history and natural sciences The high lights of the Calcutta training are the three compulsory general papers on Museum organization and Administration, Museum Education and History of Museums and Museum Techniques of Conservation and preservation, on one hand and the three optional papers either in Archaeology history, arts, crafts, anthropology or in Geology, Geography, Zoology and Botany The training also includes preparation of a dissertation and practical work. The students work in the local museums and are also sent for archaeological excavations.

In 1968, Bharat Kala Bhawan of the Banaras Hindu University, which is internationally known for its rich collections of archaeology, arts and crafts, has instituted a Diploma Course of two years' duration with a definate bias for Indian Art History The syllabi of the course is comprised of sixteen courses divided into four semesters. The sixteen courses deal with history and philosophy of museums, museum organization and administration, range of museum activities, museum and community, museum and educational programmes, documentation and presentation of subjects, conservation and museum techniques surveys of Indian painting, sculpture, taxtiles, decorative arts, achaeological materials, internship and preparation of projects in Bharat Kala Bhavan and a dissertation.

Another recently started training course exists at Aligarh It is a one year Diploma Course in Museology In the first semester, two credits are allotted to the theory of history of Museums; their functions, like collection, Registration and Cataloging, display, care, classification, museum subjects like evolution of plants and animals, European art, Indian art and architecture Another two credits are earmarked for practical work in museum techniques. In the second semester a student works to earn two credits by learning theory of wet and dry preservation, causes of deterioration of museum objects, preservation and conservation of organic and inorganic materials. Remaining two credits are given for the practical work covering the techniques of taxidermy of birds and removal of stains and cleaning of metal objects. The eight credit course is organised by the General Education Centre and the Department of Zoology of the Aligarh Muslim University.

The Museum training given in Bhopal combines museology with Archaeology Importance is given to the subjects of Pre-history, historical archaeology ; arts, study of icons and anthropology with particular reference to Madhya Pradesh The instruction is given in Hindi The training of one year duration is given in the Centre of Advanced Studies in Indology and Museology of the Birla Museum in Bhopal and it is affiliated to the Bhopal University

The sixth course is a specialized training at Pilani, Rajasthan, to prepare persons for the museums of science and technology It leads to the M.Sc (Tech) in Museum Studies It is spread over four semaeters devoted to Museum Education and Extension Services, Professional skills and techniques, thesis, seminar Practice school, professional electives of specialized museums and galleries, Agricultural museums, Health museums, Planetaria, Zoological parks and Aquaria, museum documentation, commercial displays, general biology, technological operations, recent trends in technology, energy conversion, structure and properties of materials, impact of science and technology, history of Indian science and technology, organizational behaviour and theory etc

There is a provision for Ph D. studies in Museology at Baroda, Calcutta and Pilani which also offer Master's degree of two years duration It is expected that the museology course at Banaras, Aligarh and Bhopal with their own individuality and specialization will in future offer Master's degree programmes as well as facilities for doctoral research

The National Museum, New Delhi arranges periodically short-term in-service training for the benefit of employees of various small and regional museums The training is not a full-fledged all-sided professional instruction as given at the departments of Museology but it may certainly help the trainees in sampling

sound methods of museum work The newly set-up National Research Laboratory for Conservation, New Delhi also provides for training in the latest techniques of preservation and conservation. Specialized training in preservation is very much in demand because the museums of India have to wage a constant war against the climatic causes of decay, pollution, pests and human carelessness

The existing training programmes as described earlier are striving to fulfil the needs of museums in India The programmes are being constantly renewed by their authorities with a view to serving the profession in its developmental efforts. The demand for trained persons is increasing at all levels and it is hoped that young and talented people will take maximum advantages of the existing museum training facilities in India

Museums and Formal Education

LEELA NAIR

Freelance Journalist

MANY OF our schools continue to be "reading schools". This is unfortunate, not because learning from printed words is bad, but because words lose much of their significance if there is no relevant learning experience to accompany them Due to poor economic conditions many of the schools in India have not been in a position to exploit adequately audio-visual resources for effective instruction The responsibility of the school does not and should not end with verbal instruction. It has to put other available sources into use. One such source is the Museum

A museum possesses materials not commonly available elsewhere and in this sense is a unique repository of knowledge By seeking the cooperation of the museum, the school can provide learning experiences to enrich school education

No doubt, at all levels of education, effective teaching has become increasingly contingent upon well planned audio-visual aids The need for appropriate media with which to convey knowledge and to develop skills and attitudes is particularly important in dealing with subjects where the proportion of non-verbal learning is high Science subjects to a large extent, belong to this category because they deal not only with principles in theory but also with their application besides development of skills, concepts, and attitudes oriented to real life situations

For realising the full potential education, museum experiences can be designed to enrich and supplement classroom study If we want our children to learn to think for themselves we must give them plenty of opportunities of finding things out, of questioning accepted beliefs and checking whatever possible

Educational qualities of museum exhibits have been recognised and studied in the past by many One of the pioneers in this field of study has been Alma Wittlin, author of the excellent book 'The Museum-its history and tasks in Education' (1949) and its revised edition entitled "Museums-- in search of usable future" (1970) According to her following are the educative qualities of museum exhibits '

(a) "The visual method of exhibition conveys a greater number of facts in less time than if these were expressed by words, written or spoken The visual and tactile qualities of specimens there reality" make an emotional appeal to students which seems to increase their sensitivity and capacity to assimilate information of considerable complexity and subtlety

(b) The visual method of exhibition is suitable for presenting a number of facts simultaneously, in synthesis, and thus each single factor in proper proportion and perspective with stress laid as much on the relation between facts as on each of them.

(c) In addition to imparting facts, the exhibit offers opportunities to challenge them to active cooperation in the process of learning and to stimulate in them certain attitudes such as the faculty of observation, logical thinking, responsibility and imagination "

Some Early Experiments in Evaluation

One of the early experiments to evaluate the role of museum exhibits in education and the reaction of children to them was that of Alma Wittlin conducted in 1943 at the Museum of Ethnology and Archaeology at the University of Pensylvania An experimental exhibition, 'How things began" " Was set up in which 118 children between the age group of 6 and 14, were tested They viewed the exhibition in groups of five and their reactions were gathered from their answers to a written questionnaire given to them at the end of the experimenter

According to this study, children of all ages unanimously preferred the visit to the museum to a class room lecture "The museum is better than the school, because of the real things" (7/8 years old children) "In the museum you can see and touch things, at school you can only hear about them" (10/11 year old children) "We like to examine things" (12/13 year old children)- these were some of the opinions

At the Hague, Netherlands, visits to the Museum of Education are undertaken by the museum teachers attached to the staff. Children gather in a special "school-room in the museums. The museum teacher starts with an interview with pupils, in the course of which he learns how much they known about the subject in question. A number of carefully selected objects relevant to the subject are shown to the pupils who are allowed to handle them in order to get acquainted with shape, weight of the materials. It possible, the students are allowed to try on costumes, play musical instruments, or dismantle objects, then follow the corresponding slides and films, and afterwards to be able to conform as far as possible to the pupils, sensory motor reactions they are asked to reproduce the image they have seen by drawing or by modelling in clay or wax. Finally the pupils see and discuss the museum collections.

To design really useful teaching aids, wise museum educators have learned to plan new exhibits with the advice of class-room teachers and use them to interpret significant concepts within the school curriculum Frasch (1968) reports on a teacher's survey of the Rochester Museum and Science Centre in Rochester, U.S A. Information gained from the teacher, responses a solid basis for improving existing exhibits with greater assurance. In addition, teachers have provided their 'wish list" for future exhibits and have placed their stamp of approval or disapproval on a wide range of suggested inovations on exhibit content and design. This is a solid example of the creative interest taken by a museum to promote school service and the positive response of teachers towards this end.

American Research Experience

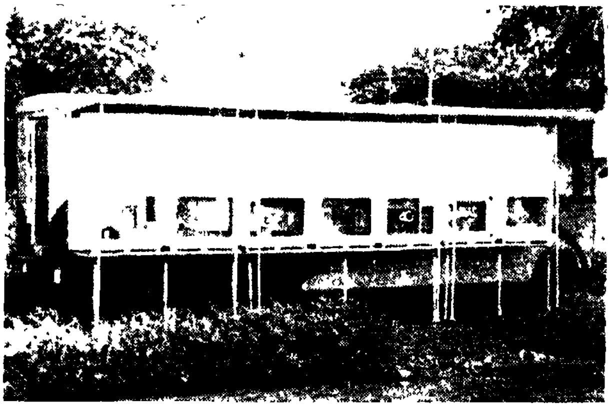
A recent study of considerable significance, on the use of museum exhibits for elementary school children was that of Kresse (1968) of the children's Museum, Boston, U.S.A. An excellent report entitled "Materials and Activities for Teachers and Chidren - A project to develop and evaluate multi-media kits for Elementary Schools" describes a four-year project conducted by the museum to demonstrate and explore the characteristics of self-contained, multi-media kits designed to enable elementary teachers and children to comunicate through non-verbal means The Project's premise was that "words are very limited as mediators of learning, particulary at the elementary level and that objects and activities are needed in great variety to expand and improve the learning of many subjects". In this study, a total of 16 units consisting primarily of real objects combined with pictures recordings, models, maps and books were developed and tested. Each unit contained enough materials for a class of 30 children to use for 2 or 3 weeks and the units were designed to circulate from class to class These units were developed by teams of project staff members (museum). subject matter and teaching consultants and were evaluated in a wide variety of school systems before making it available to the children

It is reported that teachers and children were overwhelmingly enthusiastic about the units Teachers judged class interests attention participation and learning to be greater than usual They were delighted to have such rich materials to work with Previously unresponsive children participated and many surprised their teachers by what they could do and learn Teachers felt that the children were learning from behaviour they observed and therefore, did not conduct special tests The report conducts that such exhibition units offer a practical way to bring about exciting, more meaningful, lasting and personally rewarding learning experiences

The author conducted a study to evaluate the effectiveness of museum exhibits on the learning achieved by students with regard to certain concepts of Nutrition taught to the 8th standard students of Home Science in the Secondary Schools of Gujarat. This was done by identifying the learning experiences relevant to the subjects that can be taught better through museum exhibits. A curriculum oriented exhibition at the Health Museum, Baroda, exposing students to this experience was arranged and the gain in knowledge of the students through comparison of pre-exposure and post-exposure test scores was calculated From this study it was found that there was a significant gain in knowledge achieved through museum experience. It was of interest to note that students generally categorised a 'below and average' depending on their classroom performance gained almost as equally through museum experience as did the 'above average' students. This points out the tremendous motivating power in enriching knowledge that curriculum oriented museum exhibits possess

Educational Programmes of Museums

Most of the museums in the Eastern countries have regular educational programmes for the benefit of school children These are in the form of scheduled museum tours museum classes for children, special study units and workshops, science clubs and hobby centres special publications for children, lending of exhibit kits to schools and so on Some museums even offer courses to schools teachers on how to use the museum's resources for school teaching



A newly developed Mobile Science Exhibition unit takes Science to rural India

In India too, there is a growing awareness of the educational function of the museum Some of our museums have designed programmes for school children and teachers The science and Technology museums in Calcutta and Bangalore deserve special mention in this context Speaking of Indian museums in general, a great deal still remains to be done in the area of formal education with the help of museums ☐

Science Museums in India

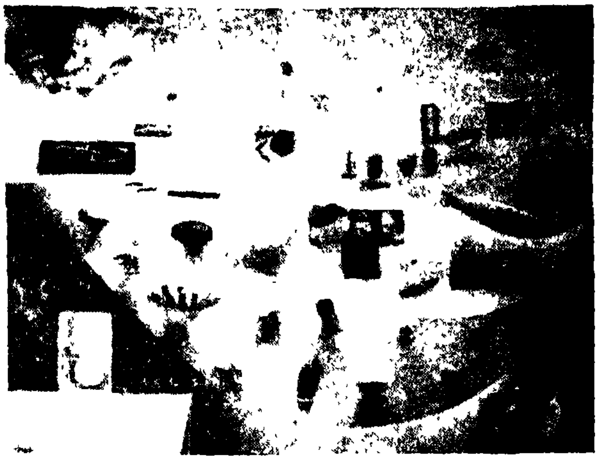
Dr. Saroj K. Ghose
Project Officer, Nehru Science Centre, Bombay.

OUR NATIONAL goals involve leap-frogging from a state of economic backwardness and social disabilities—attempting to achieve in a few decades a change which has historically taken centuries in other lands'. The key role of science in nation bulidıng was recognised by our leaders much before independence. In 1938 in an address before the National Academy of Sciences, Jawaharlal Nehru, not only pleaded for a scientific approach to the solution of the country's multifacet problems but also declared. "I should like museums and permanent exhibitions for the education of our masses . I remember the wonderful peasant museums I saw in the U.S.S.R.... I remember also vividly that splendid and astonishing museum, the Deutsches Museum at Munich, and wonder rather wistfully when some such thing will grow up in India". In 1939 a National Planning Committee was convened by the Indian National Congress by inviting leading scientists to participate in the formulation of plans of economic development and social betterment. No wonder that a separate Ministry of Scientific Research and Natural Resources was created when India achieved independence in 1947

The need for a well-coordinated 'science policy' was felt at that time This surely demanded ways and means of integrating social and economic goals of the country with those of science Innovation at all levels was a pre-requisite but this required a different working culture The traditional Indian culture believed in 'preservation' of the existing pattern of the society and not in innovation which meant radical changes It believed in hierarchical organisation structure involving centralised vertical controls ensuring social order and resisting 'changes' On the other hand scientific innovations required direct interaction between scientists and scientific organisations at the same level bringing in horizontal controls and orderly decentralised institutions. The decentralisation started when a number of scientific organisations proliferated with an dvisory committee formed in 1948 for coordinating heir work. This committee was replaced in 1956 y the Scientific Advisory Committee to the Cabinet SACC) The most significant step taken by the Parament in 1958 was the adoption of the Science Policy esolution which interalia aimed at dissemination of ientific knowledge in an atmosphere of academic eedom.

At this stage came the idea of dissemination of scienfic knowledge through some extra-curricular media nd the need to create a scientific temper in the country ith this objective, the first science museum in the untry, the Birla Industrial and Technological Museum Calcutta, was thrown open to the public in 1959 is was followed by another science museum, the svesvaraya Industrial and Technological Museum at ngalore in 1965.

The SACC was replaced by the Committee on ience and Technology (COST) in 1968 thus recogsing the separate entity of 'technology' vis-a-vis science' In 1971 the COST was replaced by a more powerful organisation, the National Committee on Science and Technology (NCST), with a view to attain a self-reliant socio-economic-technological system, which required 'a detailed specialist knowledge, skills and experience-technology activity that can not be carried out in the form of a 'laissez-faire' decentralised fashion if one has to avert an avoidable multiplicity of resource commitment, and if one desires to shorten the time-spans of development' This has been really the essence of Indian science policy since the beginning—a central coordination, and not domination, over all decentralised activities



An exhibit on shells National Museum of National History, New Delhi

Organisational Structure

Prior to April 1978, science museums had been under the overall control of the Council of Scientific and Industrial Research (CSIR) The organisational structure as tabled below will indicate decentralisation of different parallel institutions interacting at the same level under a central coordinating agency

TABLE I

Coordinating Agency	*Parallel Institutions*
NCST	Indian Council of Agriculture Research, Atomic Energy Establishment, Council of Scientific & Industrial Research (CSIR) etc. etc.
CSIR	Directorate of Museums (DM) National Laboratories (36 nos.) Cooperative Research Institutes (12 nos)
DM	Birla Industrial & Technological Museum (BITM) Visvesvaraya Industrial & Technological Museum Nehru Science Centre.
BITM	Regional Science Centres (RSC)—2 nos. Mobile Science Exhibition—3 units

Except at the RSC, each of the parallel institutions, cited above, enjoyed full autonomy within the sphere of its activities with minimal vertical control by the coordinating agency and with free interaction at the horizontal level. The decentralisation in the organisation structures of science museums in India, therefore, came as a direct consequence of the basically decentralised science policy of the country.

Task Force recommendations

The organisation of science museums in the country was seriously considered in 1973 when the Planning Commission set up a Task Force on Science Museums to advise on the essential details of a science museum, its objectives, modalities, organisation and management. The principle of decentralisation under a central co-ordination was emphasised in the recommendations of the Task Force. The Task Force observed that the diversity in size, location and scope demands that science museums need not be of the same type nor should they follow a uniform model. There may be a basic core element common to all science museums but each science museum should largely develop in its own way depending on local conditions. The Task Force therefore advocated autonomy for each science museum—but cautioned that such museums are likely to fail like the much publicised 'Vijnan Mandirs' if they operate in isolation. A central agency was found necessary to 'ensure effective co-ordination of activities of individual science museums and pool available resources in order to prevent infructuous expenditure on experimentation, designing and fabrication of models etc.'. In short the central agency is required for optimization of available resources while autonomy ensures healthy development.

The Task Force recommended setting up of three kinds of science museums in the country: major museums, regional museums and district museums. The requirements for these three categories are summed up in the table bolew.

TABLE II

Requirements	*Major Museum*	*Regional Museum*	*District Museum*
Population of the city/town in lakhs	over 8	3 to 8	below 3
Land in acres	10	5	1
Covered area in 1000 sq. ft.	210	90	20
Number of floors	4	4	1
Capital outlay in Rs. lakhs	130	50	18
Annual recurring expense in Rs. lakhs	9	5	3
Staff strength	190	63	35

There have been very strong justifications in recommending three categories of museums. The largely agro-based society, bare-handed technology, lack of scientific outlook and religious strictures still very much prevalent in rural areas—all necessitate sowing of the seeds of modern science and technology in the deep interior. In view of the territorial vastness of the country the task of taking science to villages is almost impossible for a central organisation situated in a big city. The problem is further aggravated by sharp differences in social systems, culture, local needs and resources. The theme of a very popular exhibition in Bombay may just go over the head of the people in Orissa and an exhibit having a great social impact in Kerala may appear absurd in Delhi. In order to cater to the exact need of the people one has to operate from an adjacent base and not from a distant city. The role of a central coordinating body is however not overlooked. The large museums at Calcutta, Bangalore, Bombay and Delhi can provide necessary infrastructure for rural activities in the east, south, west and north zones while the Regional and District science museums located in state capitals and district towns can actually cater to the needs of the people of that particular area. More intense activities can be carried out at block level from each of the District Science Museums or centres.

National Council of Science Museums (NCSM)

The 'Central Agency' as advocated by the Task Force finally came into being in April 1978 when a new Society christianed as the National Council of Science Museums (NCSM) was registered to function as an autonomous organisation under the administrative control of the Union Ministry of Education. The NCSM took over the existing CSIR science museums and immediately launched a massive developmental programme. The lukewarm support earlier given to the science centre at Bombay, the third major science museum to come up in the country, changed to a hot pursuit and the NCSM even decided to start the fourth major science museum at Delhi during the fifth five year plan period. A Regional Science Centre started functioning at Patna while plans are in the offing for similar Regional Centres in other state capitals. The most ambitious programme is however the planning for twenty District Science Centres in so-called socio-economically backward areas of the country. The basic infrastructure for all developmental activities is at present provided by the two major museums at Calcutta and Bangalore but the NCSM contemplates to set up a separate planning cell to effectively function as a coordinating agency.

The science museums, some of them being called as science centres, now function in the same decentralised fashion but in a different structure as shown in the table in the next page.

Except at the block level activities each parallel institution shown in the table above is expected to function with varying degree of autonomy thus providing free interaction at the working level and vertical percolation of ideas from the coordinating agencies. The ideas of the NCSM planning cell percolates down to the interior block areas through this organisational machinery.

Science museums radically differ from museums of any other kind in the magnitude of infra-structure for development of exhibits. Education is the 'sine qua non' of modern science and technology museums around the world. Science museums have to 'create' new demonstration exhibits than to depend exclusively on collection of antiquities. In India the problem has another edge. Historic exhibits are simply not so much available as India did not pass through the same innovative process of Industrial Revolution as did Europe. Science museums in India have, therefore, to set up larger infrastructure for development of exhibits.

TABLE III

Coordinating Agency	Parallel Institutions
Min. of Education Govt. of India	National Council of Science Museums (NCSM) and Various cultural and Scientific Institutions
NCSM	Birla Industrial and Technological museum (BITM) Visvesvaraya Industrial & Technological Museum, Nehru Science Centre, Bombay, Science Centre at Delhi (under planning).
BITM	Shrikrishna Science Centre, Patna (Regional Museum) District Science Centre (DSC). Purulia District Science Centre (DCS), Malda
Regional Museum	Several District Science Centres in the area.
DSC	Block level activities conducted in collaboration with the Nehru Youth Centre in different blocks. and Mobile Science Exhibition buses

The three categories of science museums as shown in Table III have different infra-structures for implementation of programmes. The major museums are equipped with full infra-structure for development of exhibits not only for its own use but also to cater to the needs of Regional and District Science Museums in the zone. A Regional Museum will have moderate infra-structure for developing its own exhibits and conducting its own programmes. A District Science Centre will have a limited infra-structure for conducting its own programmes but it will draw on the resources of a major museum for circulating exhibits. Mobile Science Exhibition units will be developed by major museums and in some cases by Regional Museums but the programming will be done by the District Science Centres as the mobile units are primarily intended for travelling through interior areas only.

Decentralisation in activities

The decentralisation is not only in respect of the organisation but also in activities of the museums. Three examples can be cited here. The first is regarding the methodology of transferring ideas from a single curator to thousands of school students. A Curator usually trains up several education assistants in the museum in carrying out new hobby projects and in making attractive and useful tecahing kits. Through Teachers Training Programmes regularly organised by the museum, each education assistant trains a few dozens of school science teachers. Each of these trained teachers in turn train and supervise the work of a large number of students in his own school. In this chain process the ideas of a Curator can propagate to thousands of students in rural areas with whom the Curator can not normally communicate.

The second example relates to the demonstration of mobile exhibition units The museum runs several mobile units each housed in a museobus and containing 24 or 28 three-dimensional working exhibits on a particular theme. Such units hold exhibitions in deep rural areas throughout the year and change exhibition sites every three days. The Curator who designs the exhibits trains up a batch of education assistants for guided lectures on the unit. One of these assistants go with the unit in turn as the Team Leader. In every exhibition site he first trains up a group of local school students who actually work as demonstrators during the exhibition. The students then educate a sizeable local population. Another chain system of communication.

The third example relates to competitive programmes organised for school students. Science Seminars are organised in different blocks wherefrom the best participants come to a district level competition at the District Science Centre. The best participants from various districts are then invited to the big city museum for a state level competition. Winners of the state level competitions in different States compete in an Interstate Seminar in a particular zone. A similar annual programme is the competitive science fair for school students. There best exhibits from different states participate in a National Science Exhibition at the capital of the country. This chain system of working ensures participation of the so far neglected interior areas in national exhibitions and competitions.

Decentralised activities are taking the museum deeper into the country and closer to the people as independent functioning of different science museums encourage freedom of thought and action resulting in innovations in museum programmes and activities. On the other hand a central co-ordinating authority at every stage helps in pooling the resources and maximising the effort Autonomy leads to self-development while co-ordination avoids multiplicity of errors This is the way the science museums in India are functioning with a clear understanding of a balanced control system appropriate to developmental functions. □

An Oasis in the Desert -Birla Museum, Pilani

V. P. Beri, Director
Birla Museum, Pilani.

A GIANT SATURN V rocket prepares for take-off—a hatch at its upper end opens to display parts of the Apollo spacecraft atop it—jets at the lower end of the booster spit fire. Beyond this spectacular launch vehicle, as it prepares and reprepares for tak-off, lies a clear sparkling pool in which drip-water from sculpture-fountains produces gentle ripples and water turbines provide a fascinating movement of endless patterns. Soft and serene music pervades the atmosphere.

On either side of the central pool tiny workmen in tiny factories produce steel and assembly tiny cars, tiny Locomotive, tiny aeroplanes and other tiny appendages of modern life. Somewhere water rolls down miniature dams to irrigate fields and provide power to cities where busy traffic swirls endlessly through intricate networks of roads and rail-roads. Elsewhere, tiny jungles yield rubber, tiny plantations produce tea or sugar and tiny farms are busy being worked by tiny farmers. But everything is not tiny here. There is a near life-size coal mine—perhaps the only one of its kind in Asia—where deep down in the darkened bowels of the earth coal is being mined by life-size figures amidst realistic settings. Very few things are static here just as very few things are static in real life.

This is the world of the Birla Museum, Pilani ;

this is a close-up of technology as it exists today; this, in short, is the story of science and industry as they shape our life.

The Birla Museum has an interesting history. With the growth of Pilani as a large educational centre housing a technological university and several schools a need was felt for a museum to be an integral part of the educational complex of the campus—a museum which would highligt the progress of science and technology as well as the growth of industry in India and would be 'neither a mausoleum for dead objects where historical appreciation turns into a yawn nor a place for leisure hour's entertainment', but a place where people, exposed to the marvels of present day science and technology, could learn about things and happenings around them in an exciting manner.

The first important step in this direction was taken in 1954 when the Birla Museum was set up in the form of a few models and charts in a small hall of the main building complex of the Birla Education Trust. This was the first set up of its kind in India. Later on, being a pioneer in its field, this museum provided inspiration and sparked the growth of several other technological museums in the country. It was then, as it is today, the only museum attached to a technological university in India.

The idea of a science and technology museum was then new for India and there was no prototype available in the country either for the concept or the infrastructure and expertise required for the establishment of such a museum Moreover, unlike most other museums, a museum of science and technology cannot depend mainly upon collecting objects or specimens already available. It has to design its own special exhibits and visuals to present difficult ideas and themes in a simplified manner. This requires much thought and preparation. Getting such exhibition material in India then was out of question. Therefore a beginning was made by importing a few exhibits from England—especially some dioramas the preparation of which involves a special technique of its own. But as the museum grew in conception and size it became increasingly difficult to import exhibits and visual-aids from foreign countries. The challenge was met by the momentous decision of preparing all the necessary exhibition material in the museum itself But this was not an easy job

At the very beginning it was necessary to train local technicians and artisans to the required level of efficiency. To meet the situation a special workshop was set up and local technicians and artisans were engaged and trained to prepare the museum displays and exhibits under expert guidance. The well-finished dioramas and other elaborate exhibits which resulted from this endeavour helped to develop local confidence and skills and saved foreign exchange in a big way.

Then came sanction for a new building with a floor area of about 40 thousand square feet. Completed in 1964 this building was furnished with exhibits and displays in late sixties. Though simple in basic design and concept the building is extremely functional and adequate for its purpose. The design permits easy movement of the visitors along the line of displays.

Existing Galleries and facilities :

Visitors time is too short. They are elus ve and diligent effort is required to attract and to hold them. The Birla Museum spares no effort in this direction. Maximum vistor participation is permitted and most **exhibits swing into action as a vistor presses a button or cranks a handle. Dramatic display and judicious use of light and colour make the exihibits and their surroundings inviting and full of excitement to an adult visitor who has stayed in casually. Then as the visitor** proceeds along the line of exhibits the story of man's achievement unfolds itself.

At present the museum has sections which deal, among other things, with different sources of power, the utilization of energy through gears, drives and automation devices, the extraction of metals from minerals through mining and refining, the transport of materials and men, the chemistry and manufacture of various basic chemicals and the production of food through agriculture. Apart from these sections dealing with scientific themes the museum also houses a gallery on art—western as well as Indian and a gallery of old arms from the neighbourhood of Pilani, both of which take the visitor on planes different from that of the material achievements of man and hence act as welcome respites for visitors.

An active museum's role, however, does not end with its display galleries. Several extension services are a must for it. The museum's small auditorium screens popular educational films twice a day and provides space for school-group programmes including periodical talks and lectures on popular scientific and technical topics. Temporary exhibitions in the form of attractive illustrations and texts on popular scientific topics are also put on display in the museum space around the central pool from time to time.



A Fish tens view of the Birla Planetorium, Calcutta

India's rapid advancement in science and technology is bound to lead to a proliferation of specialized museums in the country. The Birla Institute of Technology and Science, Pilani, offers a formal degree course leading to M.Sc. (Tech.) in Museum studies specifically meant for science and technology museums. The Birla Museum serves as a laboratory and resource centre for the students of this programme.

Immediately opposite the museum entrance stands a fitting epitome for the museum—the imposing sculpture of a man in space symbolizing man's eternal struggle for betterment without which no progress in science or technology would be possible. To the south lies a water pool with coloured fishes and water lilies, an arched bridge, a pergola and its intervening columns with vary-coloured clinging vines and ivies and marble

statues in classical style—all of which are reminiscent of ancient Greece, rightly designated as the birth-place of western science and technology. Adjacent to the northern lawns and freely undulating grounds lies a tree-shaped water reservoir leading to a miniature dam and a circuitous canal.

All these, together with lush-green lawns at various levels, form a setting which is already punctuated by some imposing objects of scientfic or technological interest such as a sun-dial, a war drum, old guns and ammunition carts, a chariot ('rath'), a palanquin and the first indegenously made Indian car To this will be added, in due course of time, other installations like large-sized models of radars, antennae, rockets, space capsules and vehicles, water-wheels, wind mills, farm machinery and similar other objects which are large enough for the garden setting and have a potential for play or participation so that the visitors, especially children, become familiar with such features of technology and science.

The museum is open to visitors five hours a day all days of the week, except Mondays and notified holidays. Admission is free and unrestricted Guide lectures are provided to organized groups and visiting parties.

Future Plans :

There is no end to human progress and a conscientious science and technology museum must always keep itself in step with contemporary developments It cannot afford to rest content on its past laurels and has therefore to struggle constantly to keep with the times in the limited space at its disposal Future developmental programmes are thus always on the Birla Museum's anvil Some developments envisaged in the near future are :

a. *A new section on popular science—the Gallery Eureka* :

This section is planned to contain several popular and participatory exhibits based on fundamental principles of electricity, magnetism, sound, heat, optics, mechanics and mathematics amongst others Children's curiosity will be raised by playing with and operating these models freely A minimum of explanatory material and guidance by instructors will be provided here just to ensure that the children remain on the right track, arrive themselves at the cause and effect relationships of phenomena and eventually formulate their own ideas and concepts about the principles involved.

b. *Rural science section* :

A large number of visitors to the Birla Museum are from the neighbouring rural areas. Thus the museum has a good potential for catering to the needs of the villages. A rural science section is therefore being planned to be set up at the museum in order to make the villagers aware of the advantages to be gained by improving upon age-old rural techniques. Models and exhibits will be so designed as to make the rural visitor see for himself the difference in out-put and efficiency between the old technique and its improved version.

c. *Educational Services Centre* :

There are 16 schools in Pilani, ranging from the primary to the higher secondary level. A special education service is being planned to cater primarily to the needs of these schools. This service will include, among other things, temporary exhibitions, study kits, other visual-aids, demonstration-lectures, educational stories and games, dramatization, films and slide shows—in fact any medium or method which has a potential for speeding up the learning process and which in addition to supplementing or complementing school education will add an entirely new dimension to the routine verbal education imparted in schools.

The workshop facilities of the museum are also visualised to be extended to include the design and production of teaching aids against specific academic needs of the various teaching institutions. A full-fledged film library of educational and documentary films on technical subjects is also planned to be organized.

Apart from the programmes presently meant for school-level students, popular demonstrations-cum-lectures are planned to be organized on scientific and technical topics for advanced-level students as well as for the lay visitors. A Creative Activity Centre will also be set up for the benefit of the local student community.

d *Natural Science Section* :

The world around us is not restricted only to the domain of the physical sciences. Natural sciences, which deal with the earth and its history and the plethora of plants and animals that inhabit it, deserve an equal attention. Therefore natural history section is intended to be added to the museum to present a broad view of the earth's history together with the major groups of plants and animals, present as well as past, which have ever inhabited it. A corner in this section will be reserved for th desert flora and fauna found in the vicinity of Pilani

e *A Planetarium-Cum-Projection Hall* :

This will have equipment for demonstrations of various aspects of the universe and will provide facilities for extension lectures on various topics for a much larger gathering than is possible in the museum's existing auditorium. For this purpose a new block of building is being planned to be added in due course of time.

f *Research in the History of Indian Science and Technology* :

The gradual development of science and technology in India needs to be traced and objects depicting these changes need to be collected and preserved. The contribution of the Indian mind in fields such as astronomy, mathematics, matellurgy and medicine remains yet to be woven together into visual media; moreover, such material and documentary evidence has yet to be preserved and presented at one place. The museum envisages this as one of the fields of its future activities.

And so the Birla Museum must go on. It must constantly translate the rapid advancements being made in science and technology into exhibits so as to relate them more closely to the lives of the people they affect—the students as well as other sections of the society. As the world moves so must the museum to show what a wonderful world we live in. □

The Role of Museums in Cultural Tourism

Mrs. Krishna Lal—
Dy. Keeper
National Museum New Delhi

"INDIA IS a large and populous country with a great past and great tradition. It can boast of some four thousand years of civilised life, and as such it must be ranked as one of the greatest civilizations of the world. It is, moreover, a living civilization whose traditions arise directly from its past. For these reasons for any stranger a visit to India must have a profound cultural impact, and in this first and broadest sense, all tourism in India involves, at least an aspect of culture-contact and is therefore potentially cultural tourism " This is how Dr. F. R. Allchin, one time UNESCO expert in cultural tourism in India wrote in May 1969. No doubt, for a foreigner, a visit to India means a visit to the great museums at New Delhi, Calcutta, Madras and Bombay which have a vast collection of India's long cultural heritage and to the Taj Mahal, Kutab Minar, temples of Khajuraho, Mahabalipuram and Madurai, to the holi cities of Allahabad, Varanasi and Kanyakumari. What is known as sight seeing, particularly for the foreigners, is not so much in visiting the industrial towns coming up in different parts of the country as going round these ancient cities museums and monuments

Familiarity is never exciting. The Western civilization is a comparatively recent phenomenon of human history and has monotonous historical background that was not much different from country to country. Whatever variety of the medieval age was there, that too was ironed out by the steam-press of the Industrial revolution. A quick visitor to Paris, Hamburg, London, Hague, Copenhagen and other European cities can hardly detect anything that separates the cultural pattern of one country from that of the other. Dress, ornament, textile, coiffre, food, transport, building, mannerism, all exhibit a dreadful uniformity and similarity. Obviously, a sensitive mind which really wants to explore something exotic and unique has to come to Oriental countries. Since even among the Oriental countries only India preserves the antique of its tradition and she alone can offer something new in terms of cultural-historical interest to a Westerner.

Cultural heritage

India is a country which is so rich in monuments that generally the importance of museums as the centres of cultural heritage is considered secondary. One can, however, hardly deny the fact that howsoever rich an archaeological site or monument may be, it can never offer the entire range or even a good cross-section of five thousand years of India's achievements in art and architecture. A monument is not a substitute for a museum. "One of the main developments of the post-independence India is the recognition of its art on an international basis. More and more museums of the world are adding Indian art to their collections and a number of exhibitions of its art have travelled abroad in recent years. All this has obviously aroused a great deal of interest in Indian museums and people are coming to India in ever increasing numbers to see its vast cultural heritage. The Indian public has also become more museum conscious."

"Illustration of India is essential and unity, howev great its diversity appears throughout the ancie continuous tradition had a common culture, and i expression in art that is architecture, sculpture, pai ting, decorative and applied arts of all types. It h tremendous value today, as this ancient land, with i protracted known history and its immensely rich ar varied material heritage takes its place in the wor as a modern leader among nations.

Knowledge Centre

Now, if masses are to be benefitted, we must loo at the problem from their angle with what desire d they visit a museum? We have been putting thi question to the visitors, of different age groups an professions, in a large number of museums we visite in India and various countries in Europe and th Middle East. Our statistics shows that in Europe about 68 per cent of visitors come to a museum to spend holidays or week-ends with their children. About 25 per cent of the visitors consist of students and others who come for increasing their general or special knowledge in a particular field of study rather than just for enjoyment, though the element of entertainment is, to a great extent, still there. It is only about 7 per cent of the visitors, busy in some research work, who come to the museum for references etc. In countries like the U.A.R. Iran, Jordan, Pakistan etc., where the percentage of educated people in the society is very low, the percentage of the three groups change like this; first about 82 per cent, second about 16 per cent, and third about 2 per cent. The percentage worked out is approximate and should be taken only as a rough guide to the prevailing facts regarding the nature of museum visitors.

According to these figures it seems that the large number of people visit museums mainly to spend their leisure hours in an atmosphere where they can forget the burden of their routine life and wander into the world little known to them. It can, therefore, be said that whatever be the aim of the museum, its activities will have to be consistent with this demand of visitors.

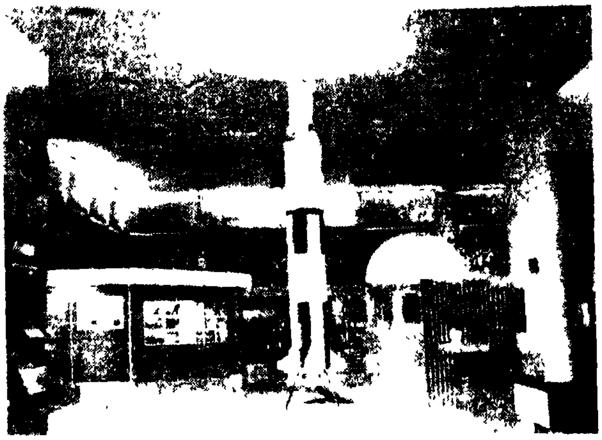
The same statistics further shows that the museum has to put all its resources towards the general intellectual improvement of the community, which means popular education in all subjects. Dr. Grace Morley, a noted museologist of the present era, writes about it in the following words:

"The idea 'museum' has changed greatly everywhere in recent years .... No longer a passive place for sheltering collections, the contemporary museum has become an active instrument of society in education most directly, but in broader cultural terms, it offers something for every age and category of population " The primary concern of a museum today, therefore, revolves round its lay visitors who come from all walks of life and have hardly any systematic knowledge of India's cultural heritage."☐

Birla Planetarium Astronomical Gallery

R. Subramanian,

Curator & Technical Director, Birla Planetarium, Calcutta.



THE BIRLA PLANETARIUM established by the Birla Education Trust started functioning on 29th September, 1962. The institution is located on the Chowringhee Road, (now known as Jawaharlal Nehru Road) in Calcutta and close to existing important public institutions like the Victoria Memorial and Indian Museum It has been set up on a plot of about an acre and with a dome of inner diameter of 76ft It is one of the largest of such institutions in the world In fact, the only other bigger Planetarium is in Moscow

The aim of this institution has been one of continuous and active research into the methods and techniques of educating the students at the school as well as at the college and university level in various aspects of astonomy, astro-physics, celestial mechanics, history of astronomy, observational astronomy, developments of space technology and the mythological stories that had been prevelent through the centuries in several countries of the world concerning the sun, the moon, the planets and the starry skies Through these 15 years of functioning, the Planetarium has designed more than 75 distinct research projects covering these several aspects and have presented the results and the interpretations through suitably designed methods and techniques to the students and to the public as series of lectures. Pedagogic research and methodology have been the key-note of activities of this Planetarium

In order to take the knowledge of astronomy even more intensively and in an easy assimilable way to the students participating in these programmes, a special astronomy course has been designed. This course is in the form of an annual seminar covering 24 topics on observational astronomy, history of astronomy, the astronomical establishments and their equipments in our own country and other countries of the world, the theories concerning the origin, age and set up of the universe, the theories of the origin of the solar system and the interpretation of the research work of the recent years in understanding new inventions and discoveries like quasars, the pulsars, the black-hole, the anti-universe, etc. As a further fillip to the value of the astronomy course, special astronomical demonstration-lectures are conducted, where these participants of the astronomy course study the starry skies under the Planetarium dome. This astronomy course is for a total of 150 participants, who are divided into two groups and each of these two groups of 75 participants receives 24 weekly lecture-demonstrations. There is inter-action between the staff and the participants for this period of 24 weeks. In collaboration with the local St. Xavier's College, Sky Observation programmes are also arranged using reflector and refractor telescopes in analysing and studying the moon, the planets, sections of the milky way, binary stars, etc

The Planetarium has also been developing through these years an astronomy gallery, wherein are depicted telescopic views of several galaxies (some edge-on and some broad-side-on). as well as star-fields, views of the plants, the sun, the moon and other celestial bodies like Nebulea Busts have been put up for the great astronomers of the world, who had lived in different centuries Models of certain telescopes are also there in the astronomy gallery. The astronomy gallery also exhibits latests developments and happenings in astronomy and space technology. Recently, the Planetarium organized a special seminar on the Moon Rock and our new additional knowledge of the moon in the light of moon rocks that had been brought to the earth by the various astronauts of the Apollo Missions. The Planetarium had the privilege of getting on loan a chunk of the moon rock for study, analysis and display for a period of 2-1/2 months.

The Planetarium also participates in astronomical exhibitions organized for comoimmoration of astronomical events. Recently it has celebrated the birth anniversaries of astronomers like Copernicus, Kepler and Aryabhatta Through the kind cooperation and collaboration of the United States Information Service and the Russian Information Service, the Planetarium has been putting up periodically special projects on the developments of space technology. In fact the Planetarium has been continuously covering the developments in that field, right from the time of the launching of the first artificial satellite Sputnik I.

This Planetarium alike other major Planetaria of the world is accepted and fully recognized as the most vital institutions for pedagogic work in the field of astronomy and allied subjects. During the last 55 years, ever since the first Planetarium was established at the Deutsches Museum in Munich in 1923, these Planetaria have played a very vital role in educational research.

Turning a little back in time to examine the Planetarium activities in our own country, it is more than 20 years when the author, working under the overall guidance of late Sir K. S. Krishnan, the then Director of the National Physical Laboratory set up a medium type of Planetarium in the campus of the National Physical Laboratory The astronomical instrument of

this medium Planetarium is not sophisticated type like the one at the Birla Planetarium but it still has its own value and importance. This medium Planetarium with a dome of about 20 ft. diameter and seating capacity for about 50 students carried out a set of graded programmes concerning the sun, the moon and the planets to the students from the schools and colleges situated in and around Delhi. This medium Planetarium is still functioning and is probably covering a few thousand students every year under its small dome. The author also has given suggestions and advice and participated in organizing some of the other medium Planetaria that have come up in recent years,—one at PorbanJar and one at Gandhi Hill Vijayawada. As mentioned earlier, the small planetaria have their limitation but, still they too have a useful role in educating the students and public at least in certain aspects of the wide field of astronomy. The author had also given his views, suggestions and advice for certain major Planetarium projects proposed for Delhi, Bangalore and Bombay. In particular, the Birla Planetarium had given detailed suggestions to Nehru Centre, Bombay regarding the lay-out, set up, administration and technical problems for the organization and running of a major type of Planetarium, using the universal type of instruments. This institution, has very recently been opened to the public and students.

Before concluding this short article, perhaps, it is worth mentioning a few points about the versatility of the astronomical instrument known as the Universal type This instrument can be set to present the starry skies, from any latitude in the northern or southern hemisphere. All the stars, upto 5.5 magnitude (a total of about 9,000 stars) are very accurately put up in their respective co-ordinates of right ascension and declination. The instrument can be used for the study and set up of the planets, the sun and the moon through several centuries accurately. The instrument could also be turned on the precession axis to present and to be able to study the co-ordinates of the stars for any period a few thousand years backwards or a few thousand years onwards. Their co-ordinates can be readily fixed, after making allowance of proper motions apart from the shift due to the precession. The nautical triangle, the mean sun, the equation of time and many other aspects of the celestial mechanics could be analysed and studied and one could make a very comprehensive and accurate catalogue of the path of the sun as well as its meridian altitude through the days, weeks and months, as for any latitude in the northern and southern hemisphere Such studies are useful for the architects and engineers in aligning the directions of their building. The Planetaria have also been used for checking certain data of positions of the planets and stars as mentioned in historical ancient documents. It has been used for training navigational people, so that, they easily follow the pattern when they are out in space or on the high seas. The Planetaria have been used for the study of the flight techniques of certain migratory birds which follow star patterns for their navigation to remote distances of several thousand miles. One could add and go on endlessly on the various aspects of pedagogic and educational research work possible under the Planetarium.

Museums–Research and Publications

P. G. Gupta,
Curator (Botany),
National Museum of Natural History,
New Delhi

MUSEUMS have been considered as one of the powerful means of dissemination of knowledge through visual aids. The functions of a museum are reflected through a variety of programmes it undertakes in an endeavour to fulfil its obligations towards the society, and these can be broadly grouped as (i) collection, preservation, study and interpretation of the museum objects and (ii) Organising attractive and aesthetically pleasant displays with a view to providing general education and also to serve as useful centres of pleasure and recreation through its exhibits and activities. The former forms the basis of research activities in a museum.

Need for Research

The reputation of a museum is directly related to the contents in its collection-richer the collection, greater is its prestige in a society. Apart from acquisitions through purchase, gifts etc, natural history museums depend largely on its own resources to collect materials Field trips, expeditions and explorations are undertaken regularly as a part of their usual collection programme resulting in increase in size of the collections year by year. Ultimately the collections attain such a proportion that its regular study with regard to classification and documentation becomes a continuing process It is quite likely that in such a large collection the museum might have acquired some objects on which no information was previously recorded Such objects become focal points of systematic research. It is the outcome of research and interpretation of collections, that provides most valuable scientific information—adding to scientific knowledge and providing up-to-date information through exhibitions Scientific documentation of research information enables the museum to extend their help to other organisations which need help and guidance in respect of specific problems.

Scope of Research

The scope of research in a museum is much wider than is commonly understood and is determined not only by the study of different disciplines in their various aspects covered under the term "natural history", but also by undertaking studies in different aspects of museum's functioning Thus, in addition to systematic research mentioned above, there are other fields of research such as pure and applied ecology; behavioural sciences, adaptive radiation, etc Applied research in museography which is gaining increasing importance these days, deals with the study of behavioural aspects of museum visitors, evaluation of museum's educational programmes through psychological and sociological tests, study of visitor response to the exhibitions in museums etc; and finally research connected with preservation of biological materials.

(i) Systematic Research

Systematic research is perhaps the most important one for a natural history museum, for, the results obtained through systematic research give useful information and provide basis for research in other biological fields. This envisages a study of the ever growing collections in natural history museums with a view to searching for new information and data which in turn are further analysed to understand the causes and effects of various phenomena taking place in nature.

(ii) Ecological and allied areas of research

Research in the field of pure and applied ecology is yet another field of investigation which is engaging increasing attention A study of plants or animals in relation to their environment, habits, geographical distribution, population etc, helps to understand nature in its totality With the continued trend of population explosion in human beings, there has been a growing tendency towards indiscriminate destruction of nature to provide more and more area for shelter and agriculture for mankind Ecological studies have revealed the grave consequences of wanton destruction of nature which has seriouesly threatened to disturb the nature's ecological balance so vital for welfare of all. Continued studies on man and the environment have, therefore, become essential to assess the situation and to propose remedial measures. A number of species of plants and animals have become extinct or are facing the danger of extinction. Such studies normally come within the purview of natural history museums and allied organisations connected with environmental studies

Museums of Natural History can also embark upon research in animal and plant behavioural sciences, adaptive radiation, zoogeography etc.

(iii) Museographical research

Museums arrange a variety of programmes like special exhibitions, demonstration lectures, guided tours through museum galleries, nature walks etc. in an attempt to impart education to the visiting public. Often the programmes are so exquisitely planned and designed to serve a definite category of visitors such as school students of certain age groups, university students or general visitors. The contents of the exhibitions, mode of presentation, use of different colour schemes etc. are mainly determined by the Curatorial staff based on their experience and assumptions. Whether the exhibitions or for that matter any other educational programme offered by a museum to a special group of visitors to communicate a specific message did produce the desired visual appeal or the educational impact needs to be systematically ascertained This calls for a proper study and research with a view to evaluating the visitor response and the impact of the programmes offered by museums by employing specialists in the field of education. Psychologists and sociologists who would undertake such studies by applying multi-directional tests like the use of questionaire and personal interview; response to different methods of presentation such as brief versus extensive and popular (general) versus technical labels; aesthetically pleasant displays with selected exhibits against highly technical and fully representative ones response to different colour schemes etc., are to be followed up by relevant statical analyses.

A study of behavioural response of visitors is very vital and its importance for a museum should not be

underestimated. Such a study makes possible to assess the effectiveness or short-comings of exhibitions and enables one to improve upon and make them more effective and purposeful. It is almost half a century ago that discussions were initiated in this direction. It, however, started receiving serious attention only during the last three decades or so. Unfortunately, in India this type of audience research studies have been very minimal in a few museums but sadly lacking in a large majority of museums.

(iv) Research in preservation techniques

The preservation of collections and exhibits is one of the vital functions of a museum. Obviously, therefore, a great deal of attention has to be focussed on research directed to evolving efficient means of preserving objects both for exhibition and storage. Natural History Museums have long been contented with the traditional methods of preserving specimens in solutions of formalin and alcohol or resorting to the classical art of taxidermy. Thanks to the interest taken by some leading Natural History Museums in the West and isolated instances of research done in Japan and India, we have today several new methods and techniques for preservation and preparation of specimens such as Freeze-Dry preservation of biological material, plastic infiltration and plastic-transfer methods applied to anatomical specimens and fossils respectively and a few colour preservatives, the latest being the use of Propylene Phenoxitol for zoological specimens Much still remains to be accomplished in evolving more efficient and reliable methods for the preservation and preparation of botanical specimens and invertebrate animals. It is incumbent upon museums of natural history to focus more attention in this field of activity.

Another important field of research particularly relevant in the tropical humid regions of the world is the protection of collections from biological factors contributing to their deterioration. Research in bio-deterioration of museum materials could provide a better understanding of the organisms responsible for such deterioration leading to the formulation of effective preventive measures

Publications

Publications provide a means of communication between the museum and the public, and also forms one of the important aspects of museums' functioning. Apart from the fact that they (publications) keep people informed of what is going on in a museum, the popularity of museums largely depends on the extent and the quality of publications brought out by them. Museum publications can be broadly grouped under following heads · (i) Research publications (ii) Popular Publications (iii) Organisational/Administrative Publications and (iv) Educational Publications.

Research Publications

Since conducting research has come to be recognised as one of the functions of the museum it becomes obligatory for them to publish periodically the results of research projects undertaken by them. Under this category of publications, therefore, are included (i) Reports on special research projects (ii) research journals/bulletins which include research papers by the staff in the fields of their specialization as also articles based on collections of the museums by other research scholars, (iii) Special monographs, (iv) bibliographies, (v) reports on expeditions/explorations/field tours, (vi) catalogue of collections etc. These publications are mainly of academic interest and speak the research activities undertaken by an institution a serve professional interest.

Popular Publications

The publications under this head serve the du purpose of giving information about the museum a popular level and provide publicity. This includ various types of publications on the museum and i collections highlighting important objects or objec of special significance. The publication of serial ar cles in newspapers or periodicals about the museu is one such instance of popular publication. Othe include publications of a museum guide book whi describes in brief the collections of a museum and giv other relevant information about the museum and i functioning. Folders defining the scope of the museu and providing guide maps showing approach roads the museum and locations of galleries within tl building with a view to regulating the movement visitors in the galleries, are usually printed for co venience of the visitors and are distributed freely a free of cost. It is also customary to bring out folde giving calender of events containing information abo special exhibits and temporary exhibitions, brief de cription of each individual gallery in a museum New Letter is another type of publication which broadl includes in its scope the achievements of the museur during a specific period of time

Organisational/Administrative publications

The publications related to the Organisationa matters describe in details, administrative procedure to be followed by the museum officials in discharge o their duties. These also serve as guidelines for the staff in respect of their duties and responsibility in an institution.

The publications of 'Policies and Procedures of Exhibit Division' and 'Policies and Procedures of Curatorial Division' both by the Rochester Museum and Science Centre, Rochester N. Y., describe precisely the procedure to be adopted by museum officials Manual of security published by Los Angelas County Museum of Art, Los Angelas, define in no uncertain terms the duties and responsibilities of the Security staff and also gives detailed information as to how security staff should act in cases of emergency; 'Manual of exhibit properties', 'Registrar's manual', 'A look you will like in labels'—brought out by Detroit Historical Museum, are but a few similar examples Other administrative publications include Annual Reports which give in detail the jobs undertaken and completed and other information related to staff changes, appointments, finance etc.

Educational Publications

The last but not the least important among the group of publications are the educational publications aimed at promoting educational services of a museum and to enhance the educational potential of the exhibits for all classes of visitors, mainly the school groups. A wide range of publications are brought out under this head, a brief mention of some of them is given below.

Special publications aimed at helping teachers and group leaders to conduct visits of the school groups are brought out by some museums. A series of handbooks published by the Chicago Museum of Science & Indust , Chicago (U.S.A.), in this regard deserve

special mention. A set of three such handbooks meant for school students belonging to different age groups. It is interesting to note how these publications provide guidelines to use the same collection with advantage for different age groups in relation to their school curriculum.

Other important types of publications under this group brought out by some of the Museums are the quiz and Information sheets. These are specially planned for children with a view to providing pleasure and recreation along with education. These are based on school curricula related to general knowledge about plants, animals, geography etc. A series of publications brought out by the Children's Museum, Detroit (U.S.A.), under their African Culture series, is one such example. Another publication titled "Resource Sheets" brought out under the same series by the same institution meant primarily for museum workshops with children and teachers is a good example of how curriculum oriented workshop practice can play an effective role in furthering a class room education. These technique resource sheets give an information on arts and artefacts of African Culture, listing the materials required for their preparation and explaining through a series of drawings how to prepare them. These proved very popular and of special interest to the children

There are a series of other publications, though of a popular nature, mainly meant for promoting education at various levels A portfolio brought out by the Metropolitan Museum of Art, New York, U S.A. "Educational programmes and materials" gives in brief the services offered by the museum under different categories and how to avail them e.g. School group visits, programme for children, service for teachers, educational materials, courses for public university and professional training, community programmes, and so on. Special literature has also been brought out (with 35 mm slides) as preparation for the museum visit.

Museum publications can often be considered as an index of the institutions involvement in adequate pursuits as well as activities aimed at fulfilling its obligations to the public What has been discussed above, provides only a broad spectrum of this important aspect of museum work, based mostly on personal observations and acquaintance with museums of different types. It is not meant as an exhaustive account of museum publications, the primary intention of this paper being to focus attention on the possibilities and potentialities of museums in this vital sphere of activity. One hopes to be able to add examples of a divergent variety of publications from Indian museums at least in due course of time. ☐

Career Management in Indian Museums

Mahtab Singh

Director, Deptt. of Science and Technology, Government of India

A STEEL magnate owning huge steel mills, once said, "Take away all my machines, equipments, tools and buildings, but leave me my team of men and I will build another equally great steel mill" This is also true of museums to some extent. Acquisition of exhibits is important for a museum. But acquisition of the right type of personnel, their training, and getting them emotionally involved so that they serve to the best of their ability is not less so.

A fine work of art can be better appreciated, if it is properly looked after, displayed in the right way and with proper lighting arrangements etc. Without the loving care from the qualified curator, exhibits of great intrinsic value, are likely to deteriorate as a result of dust, humidity, changes in temperature, effects of light, termites and other insects.

With a few exceptions, most of the museums in India are small with budget ranging between Rs. 70,000 and Rs. 400,000 per annum. Staff in such museums vary between two to fiften with the result, promotion propects for them are virtually non-existent. Even in the bigger museums, such as National Museum, New Delhi, Birla Industrial and Technological Museum, Calcutta, Natural History Museum, New Delhi, there are hardly any promotional prospects because the staff are recruited for diverse and unconnected disciplines Inter-disciplinary transfers or promotions are not practibale This would be evident by an illustrative list of areas of work represented in museums, viz Curator, Modeller, Exhibit Designer, Chemical Assistant, Calligrapher, numismatist, Photographer, Taxidermist, Electrician, Arts Painter etc.

The management of staff in any Organisation is a complex problem but it is more so in the case of museums, where there are low salaries and less promotion prospects That salary structure of museum staff is pitiably low would be clear from the fact that in the Central Museum, Pilani, with a budget of Rs. 4 5 lakhs, the highest scale of anyone there, is only Rs. 380-610/- excluding the solitery post of the Curator who heads the Musum. No wonder that in a number of museums in India, the staff were unlisted and unenthusiastic.

Considering that museums also provide education as well as aesthetic enjoyment to the people at large and are respositories of our cultural heritage, there is a case for equating musologists, especially the middle level technologists such as Modellers, Taxidermists, Exhibit Preparators with the teaching staff in schools and colleges. As an immediate step, managements would do well to raise the scale of pay of museum staff to those of teachers in good schools and colleges in the repective areas. This could possibly be achieved within existing budgets with marginal increases. If necessary expenditure on future acquisition of exhibits should be slightly brought down to meet expenditure on higher wages

Revising the salary structure is only one step towords attracting persons of higher calibre to Museums. Training them is just another and a more important need. Due to small numbers required, there are hardly any Institute to train persons as Modellers, Exhibit Preparators, Taxidarmists, etc. Bigger Museums as such are required to undertake this responsibility. Keeping in view their own requirement as a result of retirements, casualities and similar requirements of smaller museums in the same region. Such trainnig would be both, practical on the job as well as formal. The trainees after their selection through an aptitude test could be paid a stipend of say, Rs. 250/- per month. A certain number of persons should be guaranteed employment at the end of the training period.

For making suitable arrangements for training programme the Museum Association of India and International Council of Museums could play a useful role. It should not be difficult to involve UNESCO in such a venture.

Without two or three promotions in the career of an official he is likely to become listless, and uninterested in his work, sepecially after he crosses mid-thirties. As a rule, promotions are given in posts in higher rungs for which an official is qualified and considered suitable, provided there are vacancies In Museums, there are hardly any vacancies in higher echelons and whenever these do occur, the officials generally do not fulfil the qualifications required on account of their having a different set of qualifications in other disciplines. Such situations are not peculiar to Museums Most scientific departments face similar situations. Indian Agricultural Research Institute (IARI), Indian Council of Agricultural Research (ICAR), Botanical Survey of India (BSI), Zoological Survey of India (ZSI) and Council of Scientific and Industrial Research (CSIR) are some of the organisations where similar problems have been got over by introduction of a novel scheme of merit promotions and also merit increments to scientists and research staff. Every year and in some cases every 5 years, the work of a scientist is appraised by a Committee and if found meritorious, he is given promotion against a higher post which is specially created on supernumerary basis. In such a scheme, an Assistant Curator in a Museum, when he is adjudged outstanding, could be given the scale of pay of Curator, while he continues to attend to his duties earlier assigned to him as Assistant Curator. He does not, however, get over-riding seniority on those Curators who may be in position on the date of his promotion Also the post of Curator vacated by merit-promotee is not filled thereby ensuring that financial effect to the management is only marginal while the employee gets better pay and better status in recognition of his maritorious work Similarly, advance increments can be given to deserving officials who are not so meritorious, as to be given promotions.

To boost the morale of museum staff, there should be a well thought out policy of sending them to Saminars, professional meets, both in Indian and abroad. Seminars could be arranged on regional as well as on All India basis, thereby giving an opportunity to museologists to be away from their daily routine and rub shoulders with each other in an academic atmosphere Such discussions would serve as a fillip to their creative faculties.

At present only the top people of big Museum some times get opportunities of going abroad. With the help of UNESCO, UNDP and through bilateral agreements in the fields of education and culture it should be possible to send some of the middle level museologists to visit important museums abroad Also foreign museologists could be invited to conducting short-term training and lecture tours in selected fields, such as modelling, fibre-glass technology and latest display techniques of adding movement and sound to still objects in Museums. Here again, the Museums Association of India and the ICOM could be good catalytic agents in bringing about such policy changes.

An incentive scheme is successfully operating in some Western countries. In the beginning of a year a programme of work is chalked out for museum staff and also a sum of 2 to 3 per cent of the total budget is set apart as incentive money. At the end of the year a Committee evaluates performance, initiative and zeal shown and conduct of each worker from the top to the bottom level of peon and sweeper. Based on such evaluation and also the base salary of the individual officials, the incentive money is distributed. Ninety five to ninety eight per cent of the employees get some amount or the other. Those who do not get any money in any year or according to their own evaluation, get less than what they think they deserved, are heard by the Committee of evaluators and summary decisions are given. Since such incentive money is in addition to normal increments in the scale of pay and is wholly dependent on the amount of interest shown and results achieved by individual museologists, it has led to improvement in performance and achievement of targets in some cases earlier than scheduled dates. In addition, it has become a powerful tool in the hands of authorities for management. In museums in India where work is not of a routine nature as in several Government offices, such an incentive scheme is likely to bring in results out of all proportions to the funds involved.

Another step than enlightened management may take is to encourage their staff to join professional bodies in their fields of specialisation, the yearly membership fee being paid by the management. The meritorious among museum professionals could be offered free individual subscriptions to professional journals. Free membership of a well-known association and free subscription in his own name to a prestigeous professional journal of his choice, apart from making a museologist more efficient in keeping his knowledge upto date, are likely to boost his morale considerably as these are looked upon as status symbols.

In order to inculcate team spirit and retain loyality of staff, some organisations have introduced schemes of group insurance. Such schemes could be extended to Museum staff both for life and accident insurance with the help of Life Insurance Corporation. Financial effect of such scheme on management would be negligible. But a greater feeling of belonging would be among staff who join group insurance scheme ☐

Science and Archaeological Research

O. P. Agrawal

Project Officer,
National Research Laboratory for Conservation,
Lucknow.

IT IS RELATIVELY easy to learn of man's cultural past for the periods for which we have written records ; but there are periods of his history for which the only records available are the remains of buildings, pottery, tools, or other objects used by him. It is the purpose of archaeology to reconstruct man's story from these remains even if they are the only existing evidence. This is a painstaking work calling for skills and training. Like a detective the archaeologist tries to build up the story of man's past from the clues supplied by the remains left behind. The importance of the archaeological objects does not lie in their value *per se*, but in their value as sources of information on those who fabricated them for their use. The natural sciences provide important tools for the unravelling of the hidden mysteries of the past

Initial survey of the site

The archaeologist first of all explores and surveys areas where ancient man made his habitation If the archaeologist is satisfied that the place is of importance, excavations are conducted to reconstruct, from the available relics, history of the place. This method of exploration however, does not take into account the objects burried under the earth Measurement of the electrical resistivity of the soil and magnetic prospecting are two well-known techniques used for archaeological survey of material yet to be unearthed

Resistivity survey

The electrical conductivity of a mass of soil or rock is due to water, and solutions of salts and humic acids contained in the interstices of the mass. If two electrodes with different electrical potentials are placed at two points in the soil, electrolysis of the solution takes place which is separated into positive and negative ions. The flow of the ions to the oppositely charged electrodes sets up an electric current. The ratio of the applied potential to the intensity of the current, known as the resistance of the soil mass, depends upon the porosity, moisture content and the quality of the salts and acids Distortions in the regular current paths are indicative of the disturbances in the soil or the presence of material more or less resistive than the normal soil. This phenomenon has been utilised to locate archaeological sites and remains.

Magnetic survey

Magnetic prospecting, long used in the geological field, is now being applied for archaeological survey Objects of iron or any iron-bearing material located underground will cause a disturbance in the normal magnetic properties of the earth. Under this category of objects are from objects ; fired clay structures such as ovens and kilns ; walls, building remains, and filled up pits and ditches. Almost all clays heated to a dull red heat acquire a weak permanent magnetism on cooling. The effect, known as thermoremanent magnetism, results from the ferimagnetism of magnetite and haematite, so commonly found in the soils. Most soil and clays contain significant amounts of these oxides. Each particle of huematite has a magnetic seat in different directions and thereby cancel each other out. The net magnetic effect is very small. When the clay is heated, reorientation of magnetic sets takes place along the earth's magnetic field. On cooling, the new positions get fixed, resulting in appreciable magnetic effect because now the individual fields add up instead of being annulled.

It is observed that anomalies occur in magnetic properties of soils from pits and ditches. Even at ordinary temperatures there is a small amount of alignment of magnetic seats due to external magnetic field, giving rise to a degree of magnetization. The susceptibility to magnetic alignment is greater in the filled pits, which means habited areas, than in the surrounding undisturbed area. This results in magnetic discontinuity.

Measurements and plotting of magnetic maps can give an indication of human activities in the area. Measurements are done with proton magnetometres or differential fluxgate magnetometers.

Dating of objects

After a site is located and chosen for study, excavation follows. Archaeological excavations are conducted according to a well-established methodology in which vertical trenches are dug on the site ; complete records are maintained of the finds and their location ; observations are noted regarding the strata of soil profiles An important problem the excavator has to face is to place his finds in their proper chronological sequence. There are several methods available to him, the more important of which are typological comparisons with the material of known periods ; adjacent finding of dated material like coins ; association with dated historic materials rate of refuse accumulation ; stratigraphy, etc. Among-these, by far the surest method is through stratigraphical studies. Accumulation of the cultural remains of one period over that of another period form a series of layers deposited successively upon one another and are revealed as such when excavated Study of the various strata, correlating with the types of objects present in each layer gives indication of the period of each stratum.

There are several methods of dating available today. These are broadly classified as (i) absolute dating and (ii) relative dating Methods for absolute dating can give the age of materials in absolute terms, while relative dating methods depend upon correlation with other known material or are useful for comparison between objects of contemporary periods to prove their contemporaneity. One of the most exciting methods of dating is that of radiocarbon which supplies an absolute time scale.

Radio-carbon dating

There are very few innovations which have contributed so much to archaeological studies as the radiocarbon to emerge as one of the most practical methods available in the field The existence of radioactive carbon in the atmosphere was first predicated by Professor Willard Libby of the Institute of Nuclear Studies, Chicago, who soon took up experiments to use the phenomenon for chronological researches. This method can be used for dating any material, irrespective of where it is found, containing carbon in some

form. In archaeological context, wood, charcoal and bones are some of the most convenient material for radio-carbon dating. Counting of radio-carbon is done with Geiger Counter.

Dendrochronology

Dating by tree-ring counting has emerged as a significant dating method. It is known that rings are formed annually in the trunk of the trees, which can be seen in the cross-sections of most of them. Each ring is formed in response to the environmental fluctuation like annual rainfall. The sequence of the pattern of narrow and broad rings in one specimen will be similar to the pattern shown by other trees or other specimens of same period. This phenomenon makes cross-dating possible. By cross-dating it means comparison and correlation of younger trees with older trees.

For the tree-ring method to be applicable for solving archaeological problems, there are several conditions. The first, of course, is availability of enough wood or charcoal tree-ring samples. Secondly, it is necessary that the tree-rings cross-date with each other. Only when specimens cross-date with each other, dating becomes possible. In our country where it is difficult to find many wooden specimens, most being destroyed due to harsh climate, tree-ring dating is rather a difficult task, but since the method is applicable even to historical times, it can be tried usefully.

Thermoluminescence

The thermoluminescent dating method, developed only recently, is used to date pottery and ceramics. The method is of special importance because baked clay material like pottery and terracotta is always available abundantly in archaeological excavations. Researches are still going on to perfect this method. Once perfected it will have an edge over the radio-carbon method.

It is observed that many minerals when heated over ordinary incandescent red heat, emit, small, but detectable amount of light. This phenomenon of emission of light due to thermal energy is called thermoluminescence. The emission of light is due to the release of energy which was stored as electrons trapped at the imperfections and impurity spots in the mineral crystal lattices. In the original place absorption from nuclear radiation, emission by naturally occuring radio-isotops of uranium, thorium, and potassium which are present as trace impurities in the surrounding burial soil is responsible for storing the energy in the sample. The amount of thermoluminscence shown by the crystals will be proportional to the electrons trapped in them. Now we know that the potters add materials like quartz and feldspar as tempering material to their pottery. These minerals are present in the ceramic bodies in different grain sizes and the defects in their crystals may hold electrons radiated by the radioactive impurities present in the clay of the pottery and in the surrounding soil. Since these trapped electrons go on adding, the total of the nuclear energy stored in a pottery becomes significant and measurable during the passage of many centuries.

The accumulation of the energy and the resulting thermolumine scence depends upon the nuclear impurities present in the pottery sherd, on the annual rate of radiation does and also on the capability of the imperfections to absorb electrons The capacity to absorb electrons and to retain them is peculiar to each piece of pottery and, therefore, should be calibrated for age determination.

Archaeomagnetism

This is another method of dating which depends on the study of remanent magnetism of the archaeological material. The principle of this method is based on the observations that the magnetic field of the earth is continuously changing both in direction and intensity Many rocks have magnetic oxides of iron as their constituents. If the particles of these oxides (haematite and magnetite) are heated above a certain temperature called the Curie point, they lose their capacity to retain magnetism.

The magnetic values of the earth are specific for a particular period and particular place. Thus, it can be said that the magnetic field and the intensity shown by the pottery of any period is a record of that period. If we can find out what type of magnetic properties existed in a particular period it can provide a method of dating. For dating unknown material it is essential to measure the magnetic intensity and depth for various periods by using the material which has been dated by other means. When magnetic properties of various periods are known the standard dating code for the locality is produced. By comparison with this standard dating code we can try to date unknown material. The method is essentially useful for pottery found in kilns.

Dating by the measurement of natural alpha emission

Very recently, the method based on the observation of natural alpha emission by certain metals has been used to distinguish between modern and old samples of lead. Lead in metallic form has been used since very early times for making objects and works of art either in the lead form or as an alloy. Lead ores are known to contain a small quantity of uranium and its descendants. As long as the lead ore is not distributed, the uranium and its descendants remain in equilibrium with lead. When lead is extracted from the ore the radioactive equilibrium is disturbed during the various chemical processes involved in the extraction of lead metal and in the manufacture of lead compounds. In the recently produced lead compound a higher level of lead-210 than radium is be present, and in the objects which were produced a century or more ago, the radioactive disintegration rates of radium-226 and lead should be in equilibrium This basic principle has been used for dating paintings and objects which have lead as a constituent.

Obsidian Dating

Yet another new method of dating is based upon the observation that obsidian absorbs water from its surroundings and forms a detectable hydration layer. Obsidian is a variety of volcanic glass and has been used by man since ancient times for making breads and other small objects. The hydration layer thus formed on obsidian is very minute and cannot be seen by the naked eye. However, under high magnification it can be seen and measured. It is observed that the hydration of obsidian starts the moment the surface is exposed, and continues at a uniform rate till today. Measurement of the thickness of the hydration layer on the obsidian objects makes available a record of the time since the artifact was prepared. This technique is, however, still to be perfected

Chemical Methods

There are some methods available for relative dating of objects based on chemical analysis of chlorine.

nitrogen and uranium in bone. It is seen that the bones which remain buried under earth absorb fluorine from the water and with time get richer in this element. The hydroxy apatite present in bones reacts with fluorine which is retained as one of the components. The quantity of flourine depends upon the time of the burial of the bone. The longer the bone remained buried, the higher is the fluorine content in it. The measurement of fluorine content gives an idea of the date of the object. This method, however, can be used only for relative dating, i.e. for comparison between the bones of the same period. This fact seriously limits the applicability of the method and consequently it can be used when there is a need to differentiate between bones of different periods mixed together intentionally or unintentionally.

Study of art and archaeological objects

The latest scientific methods are now being increasingly used for the technical study and analysis of art material. It is impossible to tell by only visual examination which binding medium, for instance, had been used for painting a particular miniature. A binding medium is mixed with the pigment to make it adhere to the paper. It can be amongst the several like glue, gum. tamarind seed or egg Similarly, when it comes to the question of describing the pigment there are several pigments which produce similar colour To tell precisely which pigment has been used, scientific method and analytical techniques are used. Paper chromatography, thinlayer chromatography, gas chromatography. infra-red micro-spectrophotometer, ultraviolet and visual spectrophotometers are some of the most useful tools used for the purpose When enough of this data of the use of various types of pigments, various types of binding media and different varieties of papers are collected, they can be utilised for grouping the paintings in definite periods

History of art is incomplete, unless it includes precise and accurate description of the pigments, the binding media, the technique of painting, etc. Whether a particular wall painting is fresco or tempera or is done in any other techique is difficult to decide without proper scientific investigations Only through scientific analytical methods it is possible to determine which technique has been used for a particular painting.

Similarly, for understanding the technique of manufacture of other arts, scientific methods are being increasingly used to obtain a firm answer For instance different dyes were in use for dyeing textiles What dyes were or what technique was used how ancient are they are some of the questions which need scientific analysis

Analysis of ancient objec's

Archaeology today is more concerned with the cultural significance of its finds than merely with their chronology. The physical, chemical and petrological analysis of pottery, the most abundant material, found in execavations, give information about the raw materials used, their processing before being formed into ceramics, the manner of shaping into vessels, the technique of firing, the methods of painting or glazing the finished products and the use to which they were put. The analytical data helps us understand the potter's place in his society and the technological developments in various regions and periods

Metals have always fascinated man. Modern scientific methods of analysis are valuable to obtain information from the metallic objects excavated from ancient sites. History of metallurgical processes, their evolution and development can be reconstructed by metallographical studies.

The presence of trace elements in the form of impurities in objects like bronzes, other metal objects, coins, and ceramics lend specific characteristics to the objects. Their quantitative estimation make it possible to identify the characteristics and to group the objects into well-defined categories. If the same impurities are found in the objects of another locality, it makes the existence of trade between the two localities highly probable. However, to come to a correct conclusion a large number of samples are examined and analysed. Comparison is possible only when basic data is available.

For qualitative and quantitative analysis, x-ray fluorescent spectroscopy, emission spectroscopy, mass spectrometer,, gamma ray analysis, electron micropobe are some of the scientific tools that are most useful. The quantity of sample that can be taken from an art or archaeological object is very small and hence the need for using sophisticated and advanced type of analytical tools.

Conservation and Science

Chemistry has made most valuable contribution to the conservation of archaeological and museum objects Conservation of objects is as important as their excavation and recording. If the objects themselves, the only remains of the ancient culture of which a study is desired are lost, of what significance will that study be? Mere photographs can never be a substitute for the original, Corossion of objects is a combination of chemical. physical and biological processes. For conservation, it is essential to understand these precesses and to study the effect of the techniques of conservation on objects

Further, an object itself undergoes a chemical change during its stay under the earth thereby producing several salts which remain deposited on the surface of the object, all or some of which may accelerate its decay For the safety of the object it is essential to free it completely from the detrimental compounds by suitable chemical processes

When the object is free of the matrix and of the injurious products, it has to be ensured that there is no further corrosive action of atmospheric agents on it It may be necessary to apply a chemical preservative on the surface of the object or to impregnate it with suitable natural or synthetic products for strengthening the objects

These are only broad indication of fields in which the scientific disciplines can be helpful to archaeology and to museums It may seem that the methods are very expensive and thus beyond the reach of most of the institutions in our country. To some extent this is, true, but because of the speed of getting results modern techniques of analysis are far less expensive in the long run than the old methods. Now a National Research Laboratory for Conservation has been established in our country. The responsibility of this laboratory is to conduct and coordinate research in all fields of cultural property. In many countries such central research laboratories have been established and it should not be difficult to achieve a similar concentration of work in India □

Development Notes

SFDA Makes Good Progress

THE PERFORMANCE of the Smaller Farmers Development Agencies, in uplifting the socio-economic standards of rural people in the areas of their operations is quite significant. During the period April-August 78 about 15.66 lakh participants had been identified for assistance. Of them 2.74 lakh belong to scheduled castes and scheduled tribes. The total number of participants selected since the inception of the projects is 1.62 crore including 24.46 lakh SC/ST. As many as 6.75 lakh had been enrolled as members of cooperatives during the same period. Among them over 91000 were from SC/ST. The aggregate number of cooperative members enrolled since the beginning is 68 93 lakh including 8.65 lakh SC/ST.

Minor irrigation schemes have benefited about 36,000. Over 8,000 SC/ST were among the beneficiaries. The total number since the inception of the scheme is about 6 95 lakh including about 87,000 SC/ST.

Dairy development schemes helped about 20,623 farmers. Among them 4,521 were SC/ST. The total since inception is 4.01 lakh. Dairy development schemes benefited about 66000 SC/ST. The beneficiaries under poultry schemes during the five months period were 623 including 214 SC/ST and the total since inception was about 17,000. About 2,287 SC/ST received assistance under poultry schemes

The beneficiaries under the improved agricultural programmes were 3.46 lakh including about 67,000 SC/ST. The total beneficiaries since inception were 48.35 lakh including 6 26 lakh SC/ST

The loans disbursed through cooperative societies were to the tune of Rs 32.09 crore. This includes the short and medium term and long term loans. Similar loans advanced through commercial banks were worth Rs. 7.19 crores during the five months period ending August 1978. Government of India released a sum of Rs. 16.62 crores for normal schemes during the five months period. With this, aggregate grant comes to Rs. 174.56 crores including the funds released to SFDA projects in Cuddapah, Bandhara, Bhiwani and Purulia which discontinued functioning with effect from April 1, 1976 The Central Government released a sum of Rs. 13 65 crore for intensive development of the blocks during the five months period

Export of Textiles Picks Up

TEXTILES worth Rs. 22.52 crores, had been exported during April-October 1978 The exports staged a recovery from the decline suffered during last year. The increase is 7.46 per cent when compared to Rs. 20.95 crores achieved in the corresponding period of the previous year

The export performance is expected to impro further as a result of a number of promotional ste being taken by the Government and the silk and ray export promotion council.

LIC Business 20 per cent Up

LIFE INSURANCE CORPORATION of Indi recorded an increase of 20 6 per cent in thei assurance business during the first seven months o the current financial year, over the correspondin period last year. The new business has increased fron Rs. 779.82 crore to Rs. 940.10 crore and the numbe of policies from 7.73 lakh to 8.34 lakh during th same period.

The Southern Zone with completed business o Rs. 278.64 crore and 2.66 lakh policies was in th lead followed by the Western Zone with a business o Rs. 252.26 crore and 2.18 lakh policies. The Northern Eastern and Central Zones completed new business o Rs 142.22 crore Rs. 134.58 crore and Rs. 126.1 crore respectively. The number of policies issued b these zones stood at 1 lakh, 1.33 lakh and 1.10 lak respectively.

Among the Divisions, Bombay Division stood firs with a sum assured of Rs. 110.84 crore followed b Delhi and Calcutta with sum assured of Rs. 47.8 crore and Rs. 45 45 crore respectively. In respect o the number of policies also Bombay Division stoo first having completed 82 thousand policies followe by Calcutta and Hyderabad with 39 thousand an 38 thousand policies respectively

Industrial Growth Up by 9 per cent

INDUSTRIAL production registered a growth o 9 2 per cent during the first half of the current financial year

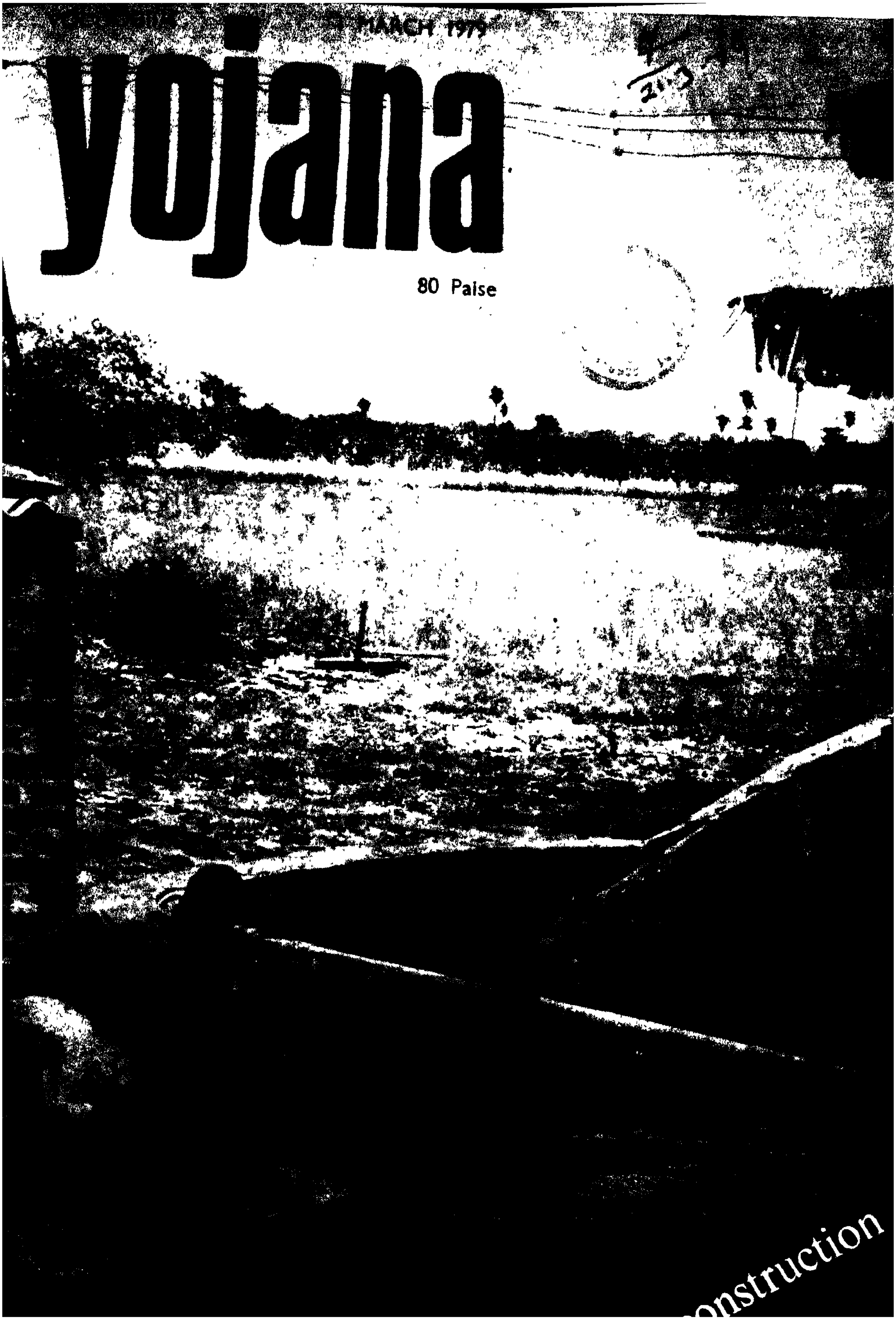
The survey conducted by the Finance Ministry revealed a significant increase in the output of crude petroleum, pig iron, fertilisers, vanaspati. sugar, cotton yarn, aluminium, blister copper, zinc, lead, commercial vehicles, jeeps, motor cycles and diesel engines Cotton cloth and jute products recorded a moderate growth electricity generation shot up by 11.4 per cent.

In the period under review, about 1,70,000 tonne of vanaspati was produced ; an increase of 26.9 pe cent Sugar production registered a growth o 84 7 per cent

The growth rate in cotton cloth was 2 7 per cen and 1096 million metres was the actual production The production of cotton yarn, including blended, rose from 289 million kg to 314 million kg or by 8.7 pe cent Jute products registered a growth of 3.8 per cent. and the actual production was 274000 tonnes.

The production of nitrogenous fertilisers at 5,50,00 tonnes was higher by 7 per cent and that of phosphati fertilizers at 204000 tonnes, by as much as 17.9 pe cent

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.


MARCH 1979
yojana
80 Paise
onstruction

YOJANA

Volume XXIII Number 4

1 March, 1979

10 Phalguna, 1900

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma
Senior Correspondents :
AHMEDABAD Pavan Patel
BOMBAY Avinash Godbole
CALCUTTA S K Roy
HYDERABAD B N Murthy
MADRAS . T R Panchapagesan
TRIVANDRUM Rosscote Krishna Pillai
Cover Design : P K Sen Gupta
Photographic Officer K S Nagaraj
Cover Photo K Narayanaswamy

Editorial Office : Yojana Bhavan, Parliament Street New Delhi-11011 **Telegraphic Address** : Yojana, New Delhi **Telephones** : 383655 387910 385481 (extensions 402 and 420) Circulation . Business Manager, Publications Division, Patiala House New Delhi-110001

Subscription : Annual—Rs 18 Two Years –Rs.30. Three Years—Rs.42 Foreign Subscription : One Year(—)£ 2.70 or $5 50. Two Years—£ 4 50 or $9 00 Three Years—£ 6 30 or $ 12.50 Single Copy— £0.12 or $ 0.25

Editorial

Rural Development for Rural Poor

'BACK TO THE villages' had been a long and familiar cry before and after the attainment of independence. If lack of money and official apathy bedevilled the schemes of rural reconstruction earlier at every step, the post-independence period had so far witnessed many of the well-meaning programmes going waste. Worse still, the developmental programmes in rural areas have tended to give benefits to the comparatively well-off, pushing the legitimate beneficiaries down the poverty line.

It is undeniable that there had been serious thinking on rural development both by the government and the planners. A firm commitment has also been made in favour of rural poor in the formulation of new policies and programmes. The planners also derive satisfaction from the claim that they have provided Rs. 30,000 crore for rural development during the Sixth Plan period.

Will larger allocation alone for the rural poor produce the desired results? If past experience is any guide, more disappointments are likely to be in store. All the schemes of rural development in the form of extra inputs for increasing production have hardly changed so far the lot of the agricultural work force, who constitute more than one-third of the rural population. They do not own the means of production but survive only by selling their labour power. For them the Minimum Wages Act and guarantee of payment of minimum wages are already statutory assurances on paper. The fate of the small and marginal farmers are no better. Despite various measures of land reforms there have been more concentration of ownership holding in Rajasthan and Punjab as of operational holdings in Gujarat, Orissa, Haryana, Punjab, Rajasthan and West Bengal between 1959-60 and 1970-71. The Co-operatives, are dominated by vested interests and have become institutions for chanelling funds to themselves, blocking the way to the needy poor. Very often the stranglehold of powerful economic interest on cooperatives have become more close because they are also the dominant political interests. Long after the abolition of landlordism, the feudal and semi-feudal land-owning classes continue to retain their hold on their land and tenants through dubious means. Even the new class of rich farmers, who are the products of commercialisation of agricultural economy and development of commodition relations, share the vices of the old feudals.

There should be immediate liquidation of the existing debts of the rural poor if we intend to emancipate them from economic bondage. Channels will have to be found to ensure that the package of welfare and development meant for them is delivered in tact and does not go into the hands of those who are affluent. Health care services should be strictly confined to the rural poor and not so-poor must pay for the health services. The concept of distributive justice should have a bearing on the life of the silent majority.

Above all, there is an urgent and immediate need to set up Special Courts to try speedily those guilty men who are indulging in wide-spread violence, leading the attack on the agricultural workers, setting fire to their huts, molesting their women and even murdering those who are desperately seeking to enjoy the benefits conferred on them under various land reform and ceiling laws.

Letters

Readers writing to this column are requested to restrict their letters to two typed pages They should also give their complete postal address,clearly

--Editor

Research in medicine

Sir,

In your issue dated December 1, 1978 the article "Exploiting the Ocean Wealth" is quite interesting, Nature around us is pregnant with many animal and plant species which can effectively resist the spread of dreadful diseases After thoroughly going through the article, I felt that all nations should concentrate on this aspect of research by mobilising all the possible resources By doing so our scientists have the chance to unravel the secrets of the vegetable kingdom and invent many life saving drugs Human beings need these drugs very badly and not the atomic weapons or "isms" Let us hope our world leaders will grow wiser and give due priority to the research in medicine.

K. Rajasekhara Rao
12-10-244 *Domalguda, Hyderabad*

Planning from below

Sir,

You too, like the rest of the critics, seem to be looking at the phenomenon called Indian Planning with jaundiced eyes from your ivory tower. I am referring to your editorial "Planning from below", Yojana, Vol. XXII No 21 Most of you, seem to be blaming the plans and the planning process for all the "developmental non happenings" I feel despite all the weak-links in our Planning and Planning process, we should have done very much better than at present You cannot deny the fact that our plans do have some merit ! Why haven't we achieved what we should have ? Where did we go wrong ?

If you agree, if the results of modern planning process and modern technology, are to percolate to the last of the poorest, there is a need for us to bring about certain social changes in our "ancient society' and instil in our people, a sense of value that is conducive to the process of development We know that our population is bursting at the seams and unless we control and regulate the population growth, no plan, whether from below or above, is going to help us in getting rid of the socio-economic ills and evils. Therefore, to control population growth and reduce the rate of population growth to a manageable level, we have been trying to propagate family planning. So far so good. But to bring about the family planning behaviour we have chosen legal (raising the age of marriage) and economic strategies (providing incentives in cash and kind) as "social change' agents

These legal economic 'social change' agents serve well, only in the short run and for achieving temporary results Such social change agents, which produce the required change in behaviour, involuntarily pave way for high rate of discontinuance of that desired social behaviour Therefore, when we realised the need for a behaviour change in the people, which would make the family planning a success, we should have thought of the CHARACTER of the Social Change Agent, we would be adopting This character is the thing that counts in the long run. In this connection 'Social marketing' as a social change agent, is uppermost in my mind The once characteristic of social marketing that needs to be mentioned is that it is perhaps the most open of the methods that are available to us. It is done visibly, it works on the noble principle of inducing voluntary response, whereas the other methods actually load the gain, load the dice, and they make the desired behaviour almost unrefusable but on principles that may not be desirable and compatible with social and individual values

I would like to point out another instance which brings home, what I have said in the above paragraphs There is no gainsaying the fact that remedy for the most of our rural-ills, lies in the co-operative movement and the co-operative institutions. Yet, today, if we have the courage enough to accept the fact, the whole co-operative movement has become a life-less movement We have failed to bring about co-operative behaviour in people Here again, I blame the social change agent we have selected. Therefore, I repeat, it is the character of the social change agent that will have the final say, in bringing about the desired behaviour This desired behaviour is a necessary and sufficient condition to achieve a welfare society

R.C. Shastri
Planning & Development Department Corporation Bank Ltd Mangaladevi Temple Road, Mangalore.

New Strategy For Rural Development

Eighty per cent of Indian population lives in the villages and they earn their livelihood on farming and allied agricultural activities. Enlisting numerous schemes meant for their development the Union Minister for Agriculture and Irrigation states that the fruits of Green and White Revolutions are yet to reach many in the society. Narrating the new strategy in the Sixth plan for the comprehensive development of the rural areas, the Minister explains the employment-oriented schemes included in the Plan.

Surjit Singh Barnala
Minister for Agriculture and Irrigation

THE INDIAN ECONOMIC situation has for long been characterised by a low growth rate, growing unemployment and under-employment, a large number of people living below the poverty line and glaring inequality in the distribution of income and capital assets. The average growth rate of 3.5 per cent realised during the last 20 years is woefully inadequate to meet the growing needs of the people of our country. In a predominantly agrarian economy like that of India where more than 80 per cent of the population lives in villages, the solution to the massive problems of poverty and unemployment lies in the development of agriculture and integrated development of rural areas. In recognition of this fact, the present Government have taken a policy decision to give maximum emphasis on agriculture and rural development during the Sixth Plan (1978--83). As a first step, the Government have raised the share of agriculture and rural development to over 40 per cent in public sector investible resources, exclusive of roads, transport and education, but including rural roads and electricity used for agriculture and electrification of villages.

Objectives

The objectives of Rural Development may broadly be defined as:

(i) Maximising production in agriculture and allied activities in the rural areas including development of rural industries with emphasis on village and cottage industries.

(ii) Generating maximum possible employment opportunities in rural areas especially for the weaker sections of the community so as to enable them to improve their standard of living.

(iii) Providing certain basic amenities like drinking water, electricity, specially for productive purposes, link roads connecting villages to market centres and facilities for health care and education.

To achieve these objectives, a comprehensive plan covering the entire rural population is called for. The rural population for this purpose can be broadly classified into the following categories:—

(i) Those possessing holdings of economic size,
(ii) Those possessing uneconomic holdings;
(iii) Landless agricultural labourers, and
(iv) Rural artisans.

Rural Employment Opportunities

The population falling in the first category would require technical assistance and guidance as well as supply of inputs and institutional finance. Increased production and intensive agricultural practices from these holdings itself will generate considerable employment opportunities to absorb a significant proportion of rural unemployed. In the case of those having uneconomic holdings, the present income will have to be supplemented by providing subsidiary occupations like dairying, poultry, farming, pisciculture, sericulture, bee-keeping, piggery, fruit and vegetable cultivation, etc. For those without land or working as petty artisans, a massive programme of rural crafts as well as cottage and small scale industries is to be organised. This would require updating of traditional skills, setting up of a chain of training cum-production centres, supply of raw materials and credit, and creating an infrastructure for effective support to production plans and establishment of suitable marketing organisations. All these call for an integrated programme of rural development.

New Approach

The new approach to rural development has been the outcome of a long evolutionary process in India. A beginning was made in the Community Development Programme which was launched in October 1952 with the main objective of bringing an overall improvement in the rural areas. Although, the programme had made its own contribution by setting up a viable infrastructure in the rural areas including an extension machinery, it has not succeeded in generating community efforts and combining the same

with those of the government for bringing about a process of self-sustaining growth in the rural areas. The Community Development Programme was followed by package programmes like the IAAP and the HYVP during the mid-sixties. Although, these programmes helped to usher in the 'Green Revolution' and contributed to rapid increase in agricultural production, particularly foodgrains, they were largely concentrated in areas with assured natural advantages and comparatively better endowments. As a consequence, these programmes tended to increase the regional disparities and accentuate economic inequalities In this situation corrective measures became necessary and certain special programmes like the SFDA/MFAL were introduced during the Fourth Plan with major emphasis on the development of the weaker sections of the rural population Also, area development programmes like the DPAP, Hill Area Development and Command Area Development (CAD) were taken up

Experience of all these programmes of rural development has shown that mere project approach or a sectoral approach is not adequate to bring about an overall development of area and to ensure the benefits to the local population particularly to the weaker sections of the society The incidence of unemployment and poverty, and the potential for development of agriculture vary widely from region to region Efforts are necessary to make the programmes area-specific and utilise all local endowments for growth for social justice and full employment The Government has set the goal to achieve the same within a period of 10 years starting from 1977

Integrated Rural Development

A beginning was sought to be made in 1977-78 by taking up 16 districts for Integrated Rural Development However, the methodology of preparation of area plans was not yet fully established, and the approach adopted under the programme required preparation of resource inventories which proved to be a time consuming process. Also, the district is too big a unit for comprehensive area planning to ensure intended benefits to each family in the target group It was accordingly considered necessary to go in for decentralised micro-level planning at block-level This was a major policy decision A Committee headed by Prof Dantwala has been set up to suggest guidelines for block-level planning Another Committee was appointed under the Chairmanship of Member (Agriculture), Planning Commission, to work out how to involve voluntary agencies in this task so as to ensure maximum participation of the people in the development process

The present strategy is to intensify efforts towards integrated development in a selected number of blocks while allowing on-going programmes like TAD, HAD, etc to operate at the present level for the stipulated period. For this purpose, 2,000 blocks out of a total of 5,004 in the country have been selected for taking up programmes under the IPD Programme These blocks are already covered under one or more of the three special programmes or SFDA. DPAP or CAD and therefore, there is already a district level agency to



Food for work programme enhances rural employment opportunities

look after the planning and implementation of the proposed programmes Each of these blocks will be allocated Rs. 5 lakhs for implementation of the proposed IPD Programme. The authority for sanction of projects is being dalegated to State-level Committees unlike in the past when projects used to come to the Government for approval Another 300 blocks are proposed to be taken up from outside the area of the special programmes every year starting from 1978-79 itself. These blocks will receive on an average Rs. 2 lakhs. Larger amounts may also be provided in case blocks can come forward with suitable schemes and show absorptive capacity There are 103 districts in the country which are not covered by any special programme While selecting these 300 blocks, care is being taken to ensure that atleast one block is allocated to each of these districts Naturally, in districts without any special agency, some district-monitoring of the programmes would have to be set up

The Weakest Sections

The main objective of this programme of intensive development of blocks is on taking the benefits of economic development to the weakest sections of the community Due emphasis has therefore been laid on selecting beneficiary-oriented programmes, based on past experiences, which are sure to give additional incomes to families in the target groups Care has also been taken to give weightage in selection to blocks with more than 20 per cent scheduled caste population in them In order to avoid regional imbalance, allocation of blocks among the States is proposed to be made in such a way that a State gets at least 40 per cent of its total number of blocks covered under this programme

A comprehensive list of programmes has already been drawn up with emphasis on beneficiary-oriented schemes However, discretion has been given to the State Governments to select programmes outside the list, as may be warranted by local conditions with prior concurrence of the Government of India As has been mentioned, in all these programmes special attention has been given to schemes benefiting the weakest sections of the community like the small and marginal farmers, sharecroppers and tenants, and landless agricultural labourers with the main objective in view of providing full employment The lot of the agricultural labourers

who constitute the vast majority of the rural poor is indeed a hard one. As most of the area of the country is mono-cropped they suffer from acute seasonal unemployment. The 'Food for Work Programme' which seeks to utilise surplus food stocks for generating rural employment through creation of productive works and durable community assets, has been stepped up considerably to tackle this problem. A target of utilising at least ten lakhs metric tonnes of wheat under the scheme has been kept for the current financial year 1978-79. Implementation of the Programme on the contemplated scale should result in an investment of about Rs 200 crore or so. The scheme directly benefits the persons in the rural areas who live below the poverty line by providing them opportunity of employment and raising their nutrition level. The works executed under it will strengthen the rural infrastructure. Thus, the Scheme has the potential of becoming a major instrument of Rural Development and Rural Employment.

Three Sectors

Taking an overall view, the objectives of Integrated Rural Development are to be achieved by integrating field programmes through development of the primary, secondary and tertiary sectors.

In the primary sector, programmes of agriculture, animal-husbandry and dairying, fishery development including social forestry will be intensified. The following programmes deserve special attention depending upon local conditions —

— Programmes of Agriculture development including efficient utilisation of land and water resources with scientific technology available ;

— Programmes of animal husbandry as a subsidiary occupation mainly directly to small peasant households and agricultural labour households so as to maximise utilisation of by-products in the farm and, at the same time, aiming at commercial production of animal husbandry products. Necessary infrastructure for commercialisation would be inbuilt in the programme.

— Programmes of social forestry to provide a base for fuel and fodder in the economy and with special earmarking of usufruct for the poorer sections of the community for exploitation as an occupation or as fodder for an animal husbandry programme. Tasar, eri and muga and lac rearing by the poorer sections should be inbuilt into the programme ;

— Programmes of farm forestry through the small peasants households as a means for subsidiary income and also for maximising use of land ;

— Programmes of inland water and brackish water fisheries to maximise output of fish per unit of water and developing it as an important occupation for the fishermen and such other backward classes in the economy ;

— Programmes of marine fishery including harvesting of natural resources through trawlers, machanised boats and country boats, keeping in view the need to maximise employment of the poorer section of the fisherman population and preventing unhealthy competition between the three sectors to the determent of the poorer classes.

In the secondary sector programmes of village and cottage industries as well as small industries, skill formation and supporting services will need to be substantially enlarged and strengthened.

Small and Village Industries

Twenty-three village industries have been identified by the Khadi and Village Industries Commission for assistance and development. There are other organisations like the All-India Handloom Board, All-India Handicrafts Board, Silk Board, Coir Board, etc offering various types of facilities for the development of industries in their respective spheres of activity. Full advantage should be taken of the facilities available from these organisations. A detailed survey made in respect of six selected small industries has shown that in most of the districts a few of the village industries, generally two or three, get a dominant place giving employment opportunities to a large number of families. In addition to those which are already popular in the area there may be a few others with potentiality for development. Depending on the resources and skills available in any particular block, the selected industries with proven potential should be taken up for intensive development.

The Ministry of Industrial Development has recently decided to have a single agency to deal with all requirements of small and village industries at the district level. Thus the focal point of development for the small scale and village industries will be taken away from the big cities and State capitals to the district headquarters in the form of District Industries Centres. This is a very welcome move. Under the single roof of the District Industries Centre, all the guidance and support required by small and village entrepreneurs will be provided. These will include economic investigation of the district, availability of raw materials and other resources, supply of machinery and equipment, arrangements for credit facilities as well as marketing. The District Industries Centre will be having a separate wing for looking after the special needs of cottage and household industries as distinct from small industries.

The focal point of development for the Small Scale and Village industries is the DIC. It will be taken away from the big cities and State Capitals to the district headquarters in the form of a single agency to deal with all requirements of small and village industries at the district level.

---

20 DPD/78—2

The extent of unemployment and under-employment in the villages is of such a magnitude that agriculture and allied sectors alone will not be able to absorb the large working force. Substantial emphasis will have to be given to the promotion of village and rural industries to maximise employment opportunities in the rural areas. It is, therefore, essential that the rural development programmes must combine with the Rural Industries Programmes and effective linkage established between the District Industries Centres and the block agencies

Tertiary sector has to be developed by creating facilities for organised marketing, processing and allied activities and various services so as to absorb increasing number of local persons in self employment, particularly the educated and semi-educated rural youth

Though allocations are being made from the core funds of the Integrated Rural Development Programm for implementing production programmes only, the block and district plans will have to be properly dovetailed with amenities programmes. It is, however, felt that direct mixing up of development programmes with those of infrastructure and social services may result in the importance of the former being diluted Therefore, infrastructural development and services programme may preferably be left to their own respective sectors to be taken up on the basis of established criteria and priorities This is not, however, mean to minimise their importance Drinking water supply, rural roads, education, nutrition and health programmes are basic needs of the rural areas Programmes of adult education and functional literacy should also receive high priority The agencies which will be entrusted with the formulation of district and block plans would be required to prepare comprehensive area plans for production and employment generation as well as for the requisite infrastructure and social services. A national plan for adult education and functional literacy has recently been formulated by the Ministry of Education and Social Welfare The contents of the programme should be studied and then fitted into the area development programmes

Antyodaya

Apart from the programmes started by the Central Government, some of the State Governments have also initiated interesting programmes in the area of rural development In this context, the Antyodaya programme of Rajasthan and the 'Central Village Scheme' o Punjab are worth citing Under its Antyodaya scheme, Rajasthan Government are selecting five poorest families in each village for providing them with means of gainful employment so that they cross the poverty line. The Punjab Government have taken up a massive programme of developing a focal point in a cluster of five villages to cater to most of the needs of the farmers The scheme is based on the 'growth centre' concept To start with one such focal point in a cluster of five villages is being set up in every block during the current year The programme will be gradually expanded to cover the entire area Both these schemes suit the local conditions and the stage of development in the States and had made a good start Similar experiments are being made by a few other states Experiences gained from all such schemes will be of immense value in future planning

Active involvement and participation by the people.



Antyodaya scheme enables Rajasthan farmers to purchase Bullocks through Bank loan

for whom the developmental programmes are meant, are very necessary for the success of the programmes and to have a fuller impact. Voluntary agencies involved in social and development work and the Panchayati Raj Institutions are close to the people and have capacity to motivate them for community participation in development programmes. A Committee was set up on Panchayati Raj under the chairmanship of Shri Asok Mehta. The Government has decided to involve voluntary agencies of repute and standing as also other peoples institutions in a major way in the formulation and implementation of rural development programmes.

The importance of organising a proper system of monitoring and concurrent evaluation in respect of Integrated Rural Development programme can hardly be over-emphasized Particularly, a system has to be developed in which it is possible to know in what measures the benefits were really reaching the families in the target group and what is the impact so that it may be possible to make mid-term corrections

To sum up the new approach of Integrated Rural Development has to be geared to fulfil the commitment of the present Government to provide full employment within the next ten years (in fact, nine years from now) The policy decisions of the Government to take up Integrated Rural Development through decentralised micro level block planning and to involve the voluntary agencies of repute and standing and such other institutions of the people in the process of planning and implementation of development programmes should go a long way in fulfilling this commitment Programes for training and orientation of the personnel as well as people's representatives concerned with planning and implementation of the programmes should be an integral part of the scheme of Integrated Rural Development

Lot of hopes and expectations have been created in the countryside by these initiatives Even many outside agencies like U N bodies are watching with interest the efforts being made by India To achieve success in a stupendous task like this, everybody in the Government and outside has to exert with full determination and contribute fully ☐

Underemployment in Agricultural Sector

Navin Chandra Joshi
Formerly Colombo Plan Reader,
Motilal Nehru College, New Delhi

The less developed countries of the world are characterised by the phenomenon of farming being a family enterprise and conducted with almost no hired labour. To the extent that this phenomenon exists, unemployment in the agricultural sector does not become manifest even when output declines. A situation such as this is identified with disguished unemployment, also called underemployment.

In the early stages of developing countries, the problem of population growth could be solved by adopting measures that improve land utilisation. The need for more labour was felt for implementing measures of land reforms and thereby for creating more productivity of land. Indeed, certain structural changes also needed the use of more labour. This tendency has been noticed in the agricultural sector of Mexico. Even successive subdivision of land made farming more labour-intensive because with decline in farm incomes, farms needed more labour to be operated more intensively. The less fertile land and the areas more difficult to reach were also brought under cultivation. Upto a certain stage with the increasing population, additional agricultural labour could be absorbed for productive work on the farm.

However, in the last two decades or so, the stage arrived when labour requirements in agriculture could not be raised any further. Even with the most labour-intensive methods of cultivation, the marginal productivity of labour remained zero. It was from this stage that the agricultural sector got a kind of built-in feature of disguised unemployment. The situation became chronic because it tended to remain static.

Biggest Shock Absorber

In an economy characterised by acute disguised unemployment in the agricultural sector, the non-agricultural sector also gets handicapped in its growth. Agricultural sector is the biggest shock-absorber for unemployment and it has to play this role even when the non-agricultural sector is expanding. This role becomes necessary for the reason that with technological changes, the modern sector has essentially to relieve some labour. This labour has to find place for employment and agriculture alone can come to its rescue. This situation becomes more poignant as there are no forces inherent in the situation which can be expected to bring about a reversal of the trend. The situation is dynamic in so far as it tends to grow in dimension with growth of population in the country.

Need for Optimum Distribution of Workers

In a way, the situation of disguised unemployment explains the existence of a kind of maldistribution of the total working population in different sectors of the economy. The ideal of optimum distribution of workers cannot be said to exist so long as some workers could be more productive in employment other than those in which they are in the present. In other words, so long as the marginal product of labour is higher in some occupations than in others, the net national output can be increased by transfer of labour from the less productive to the more productive occupations.

According to Ragnar Nurkse, disguised unemployment exists where "even with unchanged techniques of agriculture, a large part of population engaged in agriculture could be removed without reducing agricultural output." This is so because the contribution of this extra labour to the output is nearly zero. Hence, all those people who are working but whose marginal productivity is zero, are regarded as disguisedly unemployed. Nurkse believes that a certain proportion of workers in agriculture can be siphoned off to other occupations without adversely affecting the total output. It is true that disguised unemployment is not the common characteristic of all underdeveloped countries. For example, there are scarcely populated countries and regions in Latin America and Africa which are underdeveloped but they do not have the problems of over-population and under-employment. Further, the surplus in rural population depends upon the number of whole-time workers required for cultivating an acre of land given the crops, the technique of cultivation and the capital equipment. Although it is rather difficult to measure the extent of surplus manpower in agriculture on the basis of these criteria, yet social scientists cannot seek an excuse in the difficulty involved for measuring its magnitude. In fact, the impact of disguised unemployment on the economy is so widespread that its social and economic consequences need to be

reckoned with in any planning effort for the economy as a whole.

Nurkse has argued that "in an overpopulated peasant economy, we cannot point to any one person and say he is unemployed in disguise The people may all be occupied and no one may consider himself idle Yet the fact remains that a certain number of the labour force on the land could be dispensed with, without making any difference to the volume of output" As disguised unemployment is found in family employment, the concept is not generally applicable for wage labour. We know that wage rate cannot be more than the marginal productivity of workers If the marginal productivity becomes lower than the wage rate, the employer will suffer a loss and would naturally turn the labour out of job In case of family labour, however, people continue to work in agriculture even when their marginal productivity is zero as they are not paid any wages Prof. A K Sen, the noted Indian economist does not agree with this definition of disguised unemployment In his view, an understanding of this concept involves differentiation between the amount of labour being spent in producing a given volume of output and number of workers supplying this labour As such, for identifying the existence of disguised unemployment, the correct answer is not that too much labour is being spent in the production process, but that too many labourers are spending it In sum, according to Sen, Underemployment refers to the excess of labourers and not the excess of labour

The models for economic development as provided by Ragnar Nurkse and W. Arthur Lewis explicitly favour a shift of population from the agricultural to the non-agricultural sector of the economy They argue that it is better to put the disguisedly unemployed persons on some simple capital projects not far off from their homes so that their consumption needs are met by effective mobilisation of the saving potential of their productive brethren in the farming occupations. It is found that when some members seek employment in industries far away from the farms, their brethern at home consume more than usual As a result, no significant portion of their output is made available for the market. Hence, the excess labour of the agricultural sector should be utilised in stepping up the rate of capital formation Labour has to be viewed as a factor on the supply side of capital formation for it not only determines the need for capital but it can also influence its supply The analysis of T W Schultz brings forward an entirely different conclusion that "a part of the labour working in agriculture in poor countries has a marginal productivity which is not zero"

Bhagwati Committee

Without quibbling over the semantics of the concept of disguised unemployment, it is true that the phenomenon exists to a very significant degree in the Indian agricultural economy Although the various plan documents have not conceptualised the terms 'unemployment' and 'underemployment', the national sample surveys and the census figures do reveal the magnitude of the problem The Bhagwati Committee on Unemployment, appointed by the Government of India in December, 1970, assessed the extent of the problem. The Committee has noted that the "situation regarding unemployment cannot be assessed simply in terms of the size of the labour force and the percentage of unemployed persons" as these concepts are more appropriate for developed countries. The expert Committee on Unemployment Estimates (M. L. Dantwala Committee), 1970 stressed on the disaggregated assessment of the extent of underemployment and unemployment in Indian economy The Committee observed that "one of the major shortcomings of the estimates of unemployment presented in the Plan documents has been their high degree of aggregation, except for a separate reference to the problem of educated unemployment, i.e., those educated upto matriculation or higher level. The various estimates would be more meaningful for analysis and public policy and at the same time, more reliable, if distinctions are made in the demand and supply of labour in terms of their location (State or Zone), rural-urban residence, household and wage employment, and the characteristic of sex, age and education"

Estimating Disguised Unemployment

One sound method for estimating disguised unemployment would be by using the farm density Under this method, the total arable land is divided by the optimum size of landholding required for one person viz., 3 acres in the light of new farming technology. Assuming that 70 per cent of population is dependent on agriculture and the average annual acreage of cultivated land being 400 million acres, roughly 50 per cent of the rural labour force would then come under the category of disguisedly unemployed. But then, it would give only a very rough estimate

The Bhagwati Committee on Unemployment (Report submitted in 1973) made a reasonably good estimate of underemployment as shown in Table below:

(In millions)

Hours of work per week		Males	Females
Rural	1 14	4 44	4.02
	14 -28	12 18	11.38
Urban	1 14	0.78	0 51
	14 - 28	1 83	1.54

Source: Report of the Committee on Unemployment, 1973 P 55

From the above figures, it is clear that the under-employed people in India in 1971 having work for less than 14 hours a week were 8.4 million in the rural area and 1 3 million in the urban area of the country. The Committee did feel that the total number of unemployed persons in the country as a whole should include those also who work for less than 14 hours a week On this reckoning, unemployed persons in 1971 were 18 7 million which included 9 0 million who were unemployed and 9 7 million who worked for less than 14 hours a week. It means that unemployed and under-employed persons were almost equal in number and as such, the gravity of the problem of unemployment as also of under-employment should be similar. And Yet, in practice we hardly consider under-employment as any problem for the reason that it is neither visible nor does it pose any degree of threat to the stability of the economy and the Government of the day as well

Eradication of Unemployment Removes Poverty

While it is agreed that poverty is a more widespread phenomenon than unemployment or under-employment, the underlying premise behind the eradication

of unemployment has been that it would make a substantial dent on the problem of poverty. Prof. D. T Lakdawala, Deputy Chairman of the Planning Commission has remarked that the quantitative shift in the Sixth Plan worked out in terms of the growth rate which has been fixed at 4.47 per cent but the employment rate has been envisaged at 5 3 per cent, which is more than the growth rate This reflects a reversal of the past policies when the growth rate was more through capital-intensive methods without generating corresponding employment Now there would be varying sectoral rates of growth of employment. The agricultural sector has great potential and therefore mechanisations is being minimised In the Sixth Plan document, it is projected that 46 per cent of the incremental employment over the five year plan period would be absorbed in agriculture At the same time, it may be pointed out that the growth of agricultural production by itself will not be a sufficient condition for augmenting employment Mr. C. H Hanumantha Rao rightly suggests that given the existing size structure of ownership between the seed-fertilizer technology and irrigation on the one hand and mechanisation leading to a displacement of labour on the other will stand in the way of labour absorption A radical restructuring of the land ownership with simultaneous land development to increase productivity, therefore, becomes the inevitable precondition for the postulated productive absoroption of extra manpower in the agricultural sector Prof Dantwala also emphasises that unemployment and under-employment are a proximate reflection of two sets of deeper causes, namely, (i) the inadequacy or total absence of an asset base (property or skill), and (ii) the exploitative institutional arrangements What is therefore called for in solving the problem of underemployment is the ensuring of the long-term economic viability of persons affected It would thus involve the restructuring of the human and physical capital base as also the reorganisation of the production process.

Dr Raj Krishna contends that when the objective is to provide employment to every single unemployed or under-employed person so that every family is enabled to have a minimum annual income of Rs. 4,000, planning has to be multi-sectoral. He would like manpower budget to be an inherent part of the whole plan "The objective of the manpower budget is simply to ensure that the proposed activities in all sectors would together absorb the present labour surplus as well as additions to the work-force over the next five to ten years at an income level close to the poverty line." Except in areas where productivity is already high and population density is relatively low, it may not be possible to plan local full employment without accelerating activity in a number of sectors Dr Raj Krishna is of the view that labour absorption per hectare is higher on shall frams. We should attempt towards increasing productivity in small farms to optimise operational activities in them

We suggest that surplus farm workers should undertake works like roads, schools, wells, afforestation, soil conservation, irrigation, social overhead caiptal projects, etc In case the modern technology does not permit the absorption of all surplus labour in these projects, there are ancillary processes like materials handling, packaging, construction activity and so on which are not mechanised Further, various small scale units could specialise in the production of different component parts In this respect, the experience of the decentralised productive activity as prevailing in Japan could be a good lession

For the absorption of surplus agricultural labour, it would be necessary to have some administrative organisation to take care of productive activities. The organisation should supply the needed technical assistance, raw materials, credit facilities, marketing facilities and so on With increase in rural employment, the incomes and hence the demand for essential consumer goods will also increase Therefore, the output of consumer goods has to increase simultaneously as otherwise inflationary pressures will develop. It is in this context that Nurkse's proposition becomes a major contribution in solving the problem of disguised unemployment. His logic is that if those who were previously unemployed or underemployed and those on whom they depended for their subsistence do not increase their consumption, then there would be no inflationary pressures. Nurkse believes that the unproductive consumers would become productive consumers and thus they would bring about an increase in capital formation through additional incomes and savings.

The experience of underdevelopmed countries, however, suggests that the increase in income as a result of productive employment of the underemployed or unemployed in largely spent on additional consumption. This is for the reason that such persons were *hitherto at the subsistence level of consumption*. Naturally, therefore, their saving potential cannot be substantial. This then is a big dilemma and it has to be resolved with pragmatic policies and programmes if solutions to the problem of disguised unemployment are to be meaningful The major thrust should be on increasing the output of food. The other measure could be the introduction of progressive tax on all sectors, including agriculture, in order to mobilise resources for caiptal formation. □

Self-help Generates Help

SHRI SEETHA Naik is a lambani tribal small farmer in Mariyammanahalli of Hospet Block, Bellary district He owned a small stretch of dry land which could yield him just only four bags of Jowar annually He had to do away with half an acre of land to government for the construction of National Highway. In turn he got a prompt compensation from Government

Poor but determined Shri Seetha was not like others who fritter away money. He decided to use the compensation amount to improve the remaining piece of land with him Three others who also got compensation of their land for Highway Construction joined with Shri Seetha Naik to have a community irrigation project to their lands The Mariyammanahalli branch Bank of India came forward with a matching loan of Rs 40,000 for the scheme

Now, 12-1/2 acres of land belonging to four small farmers has water for irrigation Seetha and his friends are generous enough to spare surplus from their community irrigation well to other needy farmers.

This is the first ever community irrigation scheme in operation in the area

FPO, Bellary

20DPD/78—3

Utilisation of Irrigation Potential

Virendra Agarwala
Member of Parliament

The Planners have envisaged a growth rate of agricultural production at 3.98 per cent per annum during the next five years with a view to bring about a reasonable balance between demand for and supply of various agricultural commodities and generating productive employment especially for the poor in the rural areas.

Projected demand for 1982-83 for foodgrains has been calculated at 140.48 to 144.48 million tonnes. The higher levels of production possibilities for 1982-83 are based on better management of various inputs and somewhat better than average weather conditions. The main strategy to attain the required production levels would comprise among others, increase in irrigation gross cropped areas and cropping intensity as well as a larger application of inputs. Emphasis also needs to be placed on improving the rainfed farming to bring about greater stability in production and increase in productivity. Both in irrigated and rainfed farming, the weaker sections must be provided fair opportunities for growth and development.

In view of the complete inadequacy of water resources to meet the agricultural and other requirements, it becomes a matter of a great national importance that the available resouces are conserved and utilised most judiciously and economically, there has to be proper planning for water use with river basins as natural units of such plan, to provide a comprehensive outline of development possibilities of land and water resources of basins, establish priorities in respect of water uses for various purposes and indicate inter-say priorities of projects.

Economic use of water

For supplemental irrigation in canal, tracts, groundwater is best exploited by farmers and they should be encouraged to harness it by providing them with credit, technical advice and so on At present, there are some restrictions on exploiting groundwater in canal commands. This needs to be reviewed with a view to relaxing them to the extent feasible. In the Indo-Gangetic plains and the red soil tracts of the peninsula where water may not be available in the rivers or streams for rabi irrigation, rainy season flows could be diverted to such streams for kharif irrigation, thereby improving ground water charge and making water available for rabi irrigation. Schemes for such conjunctive use should be investigated and wherever found economically sound, taken up for implementation.

In view of the complete inadequacy of water resources to meet the agricultural and other requirements, it becomes a matter of a great national importance that the available resources are conserved and utilised most judiciously and economically, there has to be proper planning for water use with river basins as natural units of such plan, to provide a comprehensive outline of development possibilities of land and water resources of basins, establish priorities in respect of water uses for various purposes and indicate inter-say priorities of projects.

The gross cropped area is anticipated to increase from 173.92 million hectares in 1977-78 to 180.03 million hectares in 1982-83 mainly as a result of higher irrigation ratio. Out of the additional irrigation potential of 17 million hectares proposed to be created during the next 5 years, a utilisation of 15 million hectares is expected. Regarding irrigation distribution, higher levels of irrigation for pulses and commercial crops like cotton and oilseeds are contemplated. The gross irrigated areas is expected to grow from 48.41 million hectares in 1977-78 to 63.41 million hectares in 1982-83 that is, at an annual compound growth rate of 5.54 per cent during the plan period 1978-83 as against a growth rate of 3.18 per cent during the period 1961-62 to 1973-74

It is estimated that if certain guidelines are strictly followed, it should be possibly to ultimately irrigate about 110 million hectares; that 52 per cent of the gross sown area of 210 million hectares There is a wide disparity in the availability of water resources in different states. The percentage of gross area sown that can be ultimately irrigated ranges between 17 per cent in Himachal Pradesh and 85 per cent in Punjab. There are certain technological and economic considerations like the water requirements of crops, the productivity per unit of water use etc

which need to be taken into account in the interest of both farmer and the nation. The farmer's choice of irrigated crop depends primarily on consideration of the net income he can derive from it. The creation of enough surpluses in agriculture by increasing productivity through modernisation and technological improvements and mobilisation and savings is essential for economic development.

Irrigation—crucial agent of development

The Estimates Committee's report on the department of irrigation provides a sobering perspective to the Sixth Plan aim of making irrigation the crucial agent of economic development during the next 5 years. It has been estimated that on current form, unfinished business will take 110 years at an estimated cost of Rs. 1,330 crores Use of irrigation potential has fallen to 88 6 per cent at the end of 1976-77 as compared to 92.5 per cent at the end of the annual plans. The 19 pilot projects in 11 states recommended in 1976 are still to get off the ground. Wise investment in irrigation is evidently a much more complex enterprise than is generally realised Integrated development and conjuctive use of surface and ground water is still largely in the realm of ideas Admittedly, the new irrigation plan in the next 5 years seeks to correct some of these past mistakes but feeling persists that the corrective action proposed is not adequate For instance, most irrigation projects have fallen into a vicious cycle of delayed schedules and escalating cost so that many of them will finally cost four times the initial budget. The Nagarajunasagar project should have been completed a decade ago but till today only half the work has been done The Rajasthan Canal project is another victim of inordinate delays Yet the new irrigation plan does not place over-riding emphasis on early completion of these and other outstanding projects

Under-utilisation of irrigation potential

Major and medium irrigation projects have involved an aggregate public investment of more than Rs 4,500 crores over the last 3 decades since independence. The cumulative irrigation potential created by these projects in their completed phases up to 1977-78 has been estimated at about 23 million hectares But only about 60 per cent of this potential is being utilised The Auditor-General's report for 1975-76 on under-utilisation of the irrigation potential of all new projects in the states and on the revenue losses on their account reveal a most unsatisfactory state of affairs The general background is that only 60 per cent of the additional irrigation potential of about 9 lakh hectares was utilised in 1975-76, gross receipts (Rs 2 5 crores) from projects did not wholly cover their working expenses (Rs 4.1 crores) during 1973-74 and the revenue losses as of 1973-74 came to Rs 19 2 crores (including Rs 17 6 crores of accumulated arrears of interest on an aggregate capital outlay of Rs 347 crores). For all public irrigation works taken together, revenue receipts totalled to about Rs 65 crores as against Rs. 278 crores of expenditure on revenue account Thus, irrigation costs exceeded irrigation revenues by about 330 per cent in 1973-74 and the position today is probably no different The lessons are obvious, unless betterment levies are imposed and water rates cover at least the maintenance expenses, irrigation projects will give no returns to the exchequer.

Price Corrective method

What are the prospects for eliminating financial losses of the expending public irrigation system through the price corrective suggested by the Yojana Bhavan? The return from investments in Central and State enterprises is at present below the fair return allowed when fixing prices for the private sector and should, therefore, be raised by economics and price adjustments to a post-tax level of about 10 per cent. Water and power rates will need upward revision in order to provide a reasonable return on the rising investment in these sectors But since the price instrument is elastic in nature, one has to keep in mind its limits and be prepared for some degree of subsidised public irrigation in India. It is obvious that steep upward revision in irrigation rates with a view to bridging the revenue gap is unthinkable in the social-political conditions of the country, in any case irrigation rates cannot exceed the onfarm benefits from irrigation But at least in a broader social sense they should be made to yield returns by way of higher agricultural productivity, larger production of food and commercial crops, better standards of living for farmers and so on It is only these social returns that would justify, in the ultimate analysis, the huge losses sustained by Government on irrigation projects. There losses, are in effect, subsidies to agriculture.

It is scandalous that only 15 per cent of the irrigation potential created at a cost of Rs. 4,500 crore in the last 30 years is subjected to multiple cropping. It is estimated that if two annual crops were grown on all irrigated land, the country would have an extra 13 million tonnes of grain. Major reasons for the wasted potential is the poor planning of projects in some cases, the field channels are not constructed for years together and crop experiments not organised in order to help the farmers switch on to multiple cropping. Command areas development, have often been shockingly poor so that anything from 20 to 76 per cent of the irrigation potential goes waste. Canal seepage is another major problem, for it accounts for 15 to 40 per cent of the available water (well over the prescribed limits). Some of these aspects have now started getting due attention and steps have been drawn up for corrective actions.

Irrigation is a key to maximising agricultural productivity. But the fruits of any such development must percolate to the poor farmers who have suffered for a long period It is widely appreciated that the Janata Government has committed itself to raise the irrigation potential by 17 million hectares—8 million hectares through major and medium surface and irrigation projects, 7 million hectares from ground water irrigation and 2 mill'on hectares from other minor sources of irrigation—during the next 5 years. But the prosperity of the farmer depends entirely on maximising the utilisation of the irrigation potential. The State Governments are now required to devise ways and means so that irrigation potential so created is utilised to such an extent that agricultural productivity is raised for ensuring higher living standards to the rural poor while attaining permanent self-sufficiency in foodgrains If we fail to adequately harness this potential it would simply mean that not only planned development but the process of parliamentary democracy is neither meant for eradicating rural poverty nor to ensure social justice to the mass of the Indian people. □

Jobs For The Rural Unemployed

Prakash Anand
The Tribune, Chandigarh

OF PLANS FOR rural development there has been no dearth. The Election Manifesto of every political party, hightights the need for expediting the development of villages, and of ensuring a "better", "fuller life", to the rural masses, who constitute the country's back-bone. But a string of such development programmes, drawn up by economists and eagerly adopted by the ruling party during the past three decades, made little impact on the countryside. Although it was widely acknowledged that the country would prosper only if the villages prospered and if the standard of life of the average villager was materially improved, the implementation failures not only brought disillusionment but also caused a loss of credibility. The disillusionment and the general disbelief in the promises, so readily made by Ministers, whenever they visited the villages were intensified when even official sources admitted a couple of years ago that the benefits of five year plans had gone mostly to people who were already better off and that the percentage of those living below the poverty line, generally placed at 40 and of those living on the border line, or slightly above it in the rural areas, was almost as high.

Integrated Rural Development

Following the realisation that a wholly integrated and time-bound rural development programme would provide that real solution of the highly complex problem of development, the Janata Party drew up a plan that was designed to remove the bottlenecks in the all-round progress of villages, and ensure the social and economic development of the lakhs of Indian villages Integrated rural development, with the implicit removal of unemployment is thus an election commitment which the ruling party seems determined to fulfil. The Prime Minister, Mr. Morarji Desai, and some other official spokesmen, have repeatedly announced that poverty and unemployment would be eliminated from the country within 10 years. One year has already passed since the promise was first made, and now nine years are left to fulfil the assurance that such

as housing for everyone and also a higher standard of living which would signal the end of poverty by the fixed deadline.

The approval of the integrated rural development programme by the Parliamentary Consultative Committee of the Union Agriculture Ministry, of Chandigarh, is in pursuance of the Janata Party's earlier commitment. But this time the details have been spelt out and some idea has been given about the manner of approach and the field to be covered What is more important, the phases have been worked out alongwith the channels to be utilised to expedite progress. During the current year alone, the Ministry of Agriculture intends to cover 2300 Blocks and step by step all the 5400 blocks are proposed to be covered The financial side has also been taken care of by providing Rs 5 lakh for each block to meet the expenditure on the integrated rural development programme. This indicates, that the obvious lesson from past failures on the rural front has been duly learnt and that the financial bottleneck will soon be removed The decision not to creat another infrastructure but to utilise the existing block level setup to facilitate the implementation process is also well-conceived A special machinery to be regulated by the Central Government would also have caused more delay

Slow Pace

But it is somewhat surprising that even after the passage of whole year since the announcement of the plan to eliminate unemployment and expedite economic development, micro-planning at the block level has still to be done At this slow speed it would be futile to expect that the goals would be achieved by the target date. Since the task is a massive one, requiring the concerted efforts of all the official and non-official agencies working for rural development avoidance of the crippling coils of administrative red tape and speedy decisions are necessary So far there has been no indication of the requisite speed and the sense of urgency The lack of concrete progress in rural development during the first year of the Janata Party's rule invites some criticism. Not to speak of one-tenth of the colossal task having been accomplished even one-twentieth part of the work has not been done So far there has only been talk, promise and some file work It is also regrettable that although integrated rural development programmes have been prepared and announced with much fanfare in some of the states, including Punjab, the actual progress leaves much to be desired.

There have been efforts from areas that in the initial selection of villages and clusters of villages for development extraneous considerations have prevailed and that pressures and counter-pressures by politicians, understandably anxious to show concrete results in their constituencies, have delayed the process of development. It would be a pity if such an ambitious programme or even a part of it flounders at the altar of personal ambition and petty politics.

Need for export planning

Unemployment and under-employment in the rural areas have posed tough problems for the past many years The number of people who get only casual and temporary employment at sowing and harvest time for instance, is quite large The plight of landless labourers can be improved only through a sustained programme, such as the new one for integrated development, since the attack on this long-standing menace is to be multisided Irrigation, drainage and road-building projects will surely help a great deal in creating job opportunities but care has to be taken that the bitter failures of the past in the shape of earthwork on roads anti-flood embankments and irrigation channels getting washed off and the whole effort going waste, are not repeated This is precisely where the importance of expert planning comes in The contribution of all employment programmes has to be lasting and positive Small and cottage industries-already over 500 items have been reserved for such enterprises, even at the cost of large establishments, if adequately financed, will certainly help reduce unemployment, but in this sphere also adequate marketing facilities and timely sales have to be ensured Handloom and cottage industry products have a distinct place in the nation's economy, but the price is often higher than of similar products of factories and this slows down sales, thereby endangering the viability of cottage industries If such small scale enterprises are not carefully looked after and many of them have to be closed down on providing economically unviable not only would the employed hands again become jobless but the general taxpayer would also suffer since the loans given for smallscale enterprises would not be recovered Without such loans it is difficult, if not impossible, for the weaker sections of society to start even minor industries This stresses the importance of well-devised, well sustained and fully coordinated schemes to prevent waste of public money and what is no less important avoid an adverse political reaction caused by failure or only partial success of a high-sounding scheme □

Self employment generates employment

YOUNG MAN OF 35 years Shri Wanlal son of Shri Punam Chand of Devel village, Dungarpur District was once an assistant in a small soap factory. He was getting Rs 150 p m and struggling to meet both ends in Ahmedabad.

Once he visited his native village where an idea struck to him on seeing his own huge building to start a soap factory He approached the Bank of Baroda, Dungarpur for a loan to start a small scale industry.

In this way he started the soap-factory in his village, Devel Not only he earns a good income but he has also become a source of employment for the other village people His example is worth to emulate.

–FPO Dungarpur

Carpet Weavers of Arunachal Pradesh

Ikbal Kaul
Freelance Journalist

THE GOVERNMENT Craft Centre, nestling in the valley of Tawang at an altitude of 3100 metre in Kameng district of Arunachal Pradesh, famed for its highly venerated Buddhist monestary, 331 km from Tezpur, was bustling with creative activities. A most modern institution, the centre is striving hard to give an impetus to the traditional arts and crafts of the valley, thereby translating the cherished dream of Jawaharlal Nehru The centre is not only a centre for production, but an institution for training of raw, rude and rough recruits, both boys and girls. There are sections for carpet, painting, smithy (iron and precious metals), weaving (cotton and woollen), and wood work.

By March 1978, the Tawang Craft Centre had trained 505 boys and girls in different arts and crafts. The total turnover of the centre's various workshops, from April 1966 to March 1975, was of a value of Rs. 5 12 lakh. The Arunachal Government gives a stipend of Rs. 50 per month to each trainee, whose training lasts two years. The trainee may be employed in the workshop, or may be helped to set up own loom at home.

Of the various workshops of the centre, the most fascinating was the carpet workshop. There were nine young girls between 14 and 20 years, all uneducated and coming from primitive backgrounds, who were trained in the craftmanship of handmade pile carpets The Tawang carpet workshop is run by Mrs. Chamjeo, a 60-year-old lady and her husband, Mr. Phuntsola, 15 years junior to her. The husband and wife team of instructors had learnt the art at Chanzo in Lhasa district of Tibet They had settled in Tawang some 25 years back and were preparing the girls of the valley in this highly skilled art Miss Kesang Chhotem, 20, is the third instructor. Becoming an instructor, though junior, at the young age of 20, is a testimony to her qualities and skill Graduating from the workshop in March 1972, after a two-year training, she was immediately employed in the centre Her father is a shoe-maker in Tawang.

The trainees, under the guidance of the instructors, are making luxuriant carpets with a fine pitch No written design aided them in their work, as is usual with the carpet weavers of the world over. The beautiful designs, colour schemes and exotic patterns, everything, come out spontaneously from the fertile imagination of the instructors and the trainees

The wool is procured locally and fast chemical dyes are used. Grading, mixing and yarn-making, all the processes, are done in the workshop. The warp or lengthwise yarns of cotton are wound on top and bottom beams. The cotton yarn is covered by a thin coating of multicoloured wool, to hide the cotton thread in the back of the carpet Wool yarn of different hues is wound up into balls, which are kept in wooden trays on either side of the weaver In other carpet centres in the country, the yarn balls hang down from a string, attached to the upper ends of the side beams of the frame.

The Arunachalese carpets have great potentialities Sooner, they are bound to flood the markets of the country and beat the Amritsar, Kashmir and Mirzapur varieties hollow. But to modernise the craft and make it sophisticated, the role of the carpet designer cannot be overemphasised. This will be a refinement worthy of any effort It is in this regard that the Arunachal Administration should bend its energies.

Ten craft centres were set up in 1953 in the then NEFA Their character was to promote the traditional tribal arts and crafts. Another aim was to train the local artisans in various crafts to enable them to have a subsidiary source of income. To enthuse and evoke the right response, 380 stipends per year were sanctioned and facilities for hostels were also provided at the centres Subsequently, the number of centres was reduced to six but six mobile weaving units were added By 1968-69, the number of centres went up to 17.

At present, there are 20 craft centres functioning in the five districts of Arunachal Pradesh. Besides, eight mobile units are also functioning in two districts Now training in the vocational trades has been expanded. This includes bamboo and cane work, blacksmithy, leather work, mask making, painting, silversmithy, weaving, wood-carving and tailoring.

Six craft centres have been set up in Kameng district two each at Bomdila, Tawang and Seppa. There are five in Subansiri district—four at Ziro and one at Daporijo Four centres have been opened in Siang district—three at Along and one at Pasighat. The two centres in Lohit district have been established at Tezu and Anini There are three centres in Tirap district. Of the eight mobile units, three are functioning at Tayum, Yinkiong and Liromoba, all the three in Siang district. The rest are in Tirap district at Nampong, Miao, Pancho, Vijaynagar and Wakka.

In July 1975, the first batch of all the 17 who had technical education at Roing in Lohit district passed out from the Industrial Training Institute creditably The results were excellent- One hundred per cent. Of the 17, six were trained as automobile mechanics, four electricians, five carpenters and two plumbers. By 1976, about 5,719 tribal boys and girls had the privilege of receiving training in the arts, crafts and technical vocations in the craft centres and the Industrial Training Institute. This is a significant stride in the industrial uplift of the Union Territory. The percentage works out to 1 . 22 in a population of over 4 67 lakh people. Training helps them to set up cottage industries on scientific lines. Part-time employment facilities are being provided to the trained craftmen under special production programmes. So far, this has benefitted 4,950 persons to supplement their earnings.

From their inception in 1953 to March 1975, the centres had produced goods worth Rs 65 52 lakh. At present, the products are purchased across the counters of the craft centres by Armymen, Government servants and touring officials The problem of overproduction could be solved by setting up emporia in the metropolitan cities of the country, as has been done by other States The example of the Arunachal Pradesh Central Emporium, set up years ago at Shillong, could be profitably emulated

The craft centres and the Industrial Training Institute have rendered a signal service to the socially and culturally weaker section of our society. They have enabled the Arunachalese youth to stand on their feet. Indeed, these institutions, have pioneered the path and set the pace for the development of the cottage and small-scale sector. In the course of time, it will herald industrial revolution of Arunachal Pradesh.

Self-Replicating Process For Employment Generation

M. S. Swaminathan
Director General,
Indian Council of Agricultural Research

THE greatest challenge before us now is achieving self-replicating economic growth which can provide gainful employment to everyone. Here in India we were fortunate enough to have had a seminal thinker of the calibre of Mahatma Gandhi who gave us the concept of Antyodaya, in his view, the utility of all development programmes must be measured against one basic yardstick, viz., the real benefits to be derived by the poorest person. Only by bringing all developmental projects within the framework of the antyodaya principle, a self replicating pattern of rural development can be generated.

Productive employment banishes malnutrition

It was, again, Mahatma Gandhi who identified the major malady of the rural scene as "the divorce between intellect and labour" which resulted in condemning millions of persons to live and work in despair and drudgery. Prof. P. V. S. Sukhatme in his Ninth Lal Bahadur Shastry Memorial Lecture has given estimates of the incidence of malnutrition in India. According to him, "there are close to a 100 million in the country who are chronically malnourished and poor... the majority of them are labour households with little or no land of their own, depending almost exclusively for their earnings on the casual work they obtain". He goes on to point out that these are the people who, for want of adequate food, are unable to attain their full potential, who are particularly vulnerable to diseases and natural calamities, and live a precarious life for lack of gainful employment and food at prices they can afford. This human tragedy becomes even more painful in the context of recent increases achieved in grain reserves. On the one hand, we are finding it difficult to build up adequate storage capacity for foodgrains, and on the other hand, we cannot banish malnutrition by increasing the purchasing power of the rural poor through productive employment.

Faced by this dilemma, one can see that political will and professional skill must combine effectively to provide an urgent breakthrough. It is here that professional scientists and technologists have a vital role to play in achieving rural transformation. Their first step is to prepare a scientific balance sheet of the developmental assets and liabilities of a selected rural area. An analysis of this rural balance sheet will help to identify the development opportunities that exist and the bottlenecks that have to be removed. The next step is to convert these developmental opportunities into a portfolio of economically viable projects, in consultation with the local people, bankers and administrators. It is at this stage that the "Antyodaya" concept becomes especially relevant. Only those projects which will help to increase the purchasing power of the rural poor should be taken up by Government and voluntary agencies for immediate implementation. This can be done by subjecting the various projects to an inter-disciplinary impact analysis based on both economic and ecological considerations. The better-off sections of the rural community can be left to depend upon their own initiatives. It is in establishing the new system of priorities for the benefit of the rural poor that we should attempt a radical departure from previous tradition.

Employment-generation programmes, based on scientific resource utilisation strategies, can be of two major types :

(a) employment generated by Government through developmental projects, and

(b) employment generated through projects based on self-help and group initiative

In the immediate future, Government can help in providing a minimum wage for rural labour by taking up a massive programme for irrigation, supply of drinking water and communications-sectors with significant employment potential. The national irrigation



Much of the physical strain of the farm workers can be eliminated by the application of appropriate technology.

plan now under development envisages bringing ultimately 57 million hectares under major and medium irrigation projects and 50 million hectares under minor irrigation projects. Development of this basic infrastructure will increase the opportunities for self-employment through multiple cropping and mixed farming.

Government projects for the development of communication and supply of drinking water in the rural areas will also help in increasing the purchasing power of the rural poor and in developing the rural infrastructure.

Guidelines for employment programmes

In the long-term, however, the real solution lies in generating employment through projects based on self-help and group initiative. It is these projects which have a special relevance to countries like ours with their own distinctive patterns of social organisation and massive man-and woman-power resources. Perhaps, at this stage, one may think of setting down certain basic guidelines for developing employment generation programmes :

(a) the conversion of human energy into a specific output should be enhanced by the application of appropriate technology ; best use should be made of the delicate finger-skills so widespread in the different parts of the country.

(b) the role of woman in the rural labour force should be given specific recognition; agricultural extension programmes should be so designed as to reach out to them and wherever possible, agro-industries should be organised to provide for both part-time employment and home-based functioning;

(c) children should be relieved of full-time income-earning responsibilities so that they can attend school,

(d) wherever possible, landless labour should be helped to become owners of production units. Increasingly land will become the most priceless possession. it will be almost impossible to ensure that every one own a viable plot of land. And so, animal husbandry, fisheries and rural industries will have to be developed as alternative production units to be owned by landless labour. It is here that basic public policy issues are involved. For example, India has a coast-

line of about 6,000 km which at present supports only 3.5 million fishing families. When scientific sea farming practices are developed through a blend of culture and capture fisheries, the potential employment will be increased considerably. It will be necessary to decide immediately that landless labour should get the first priority in allocating sea space for mariculture. New settlements combining sericulture with the plantation of casurina, cashewnut and coconut can provide the basis for prosperous coastal communities,

(e) in order to hasten the process of marrying intellect with labour, all educational, scientific and technological institutions should be assigned well-defined responsibilities for undertaking developmental balance sheets for selected areas, and preparing portfolios of viable projects in consultation with the people of the area, and

(f) state governments, political parties, voluntary agencies and local self-governing institutions should accept the responsibility for preparing the local community to implement these plans.

Upgrading Rural Economy

A Core Group on Integrated Rural Development constituted by the I.C.A.R. developed the following guidelines for organising a scientific upgrading of the rural economy :

(a) the Action plans must provide gainful employment and increase the purchasing power of the rural poor, in particular landless labour, marginal farmers, artisans, women and children,

(b) employment generation programmes must spring from scientific resources utilisation strategies, and

(c) the programmes should be simple in operation and economically viable so that they are quickly capable of achieving self-reliance and self-replication

(d) the major thrust of the programmes should be the effective utilisation of the most priceless of all resources, namely the human resource.

It has been emphasised that the programmes should have no rigid structure, instead, each action plan should be tailored to suit local needs, resources and priorities based upon participation of the local community.

The planning phase was accordingly divided into three steps :

(1) compilation of an integrated resources inventory that will identify natural resources, infrastructure and participants drawn from the rural poor,

(2) undertaking a Malady-Remedy Analysis and preparing draft Action Plans indicating major break through points; and

(3) vetting the draft Action Plans with the help of the local community and selecting programmes for test implementation on the basis of the antyodaya.

In the rice-growing delta of Cauvery River in Thanjavur District, Tamil Nadu, it appears possible to provide additional employment and income for families of landless labour and marginal farmers through the introduction of a relevant package of post-harvest technology. This package involves fortification of rice straw with urea and molasses for use as cattle and goat feed; extraction of rice bran oil and use of de-oiled bran and rice husk. The scope for fish production in inland ponds can also be fully exploited for this purpose, suitable animal husbandry programmes have to be organised side by side with a Fodder Bank, a Fish Seed Bank and a Co-operative Service Society. This approach can be adopted in every major cereal-based farming system.

In a totally different milieu, families of fishermen engaged in capture fisheries at Kovalam village, Tamil Nadu, will be taught open-sea culture of mussels on simple rafts and poles made from locally-available raw materials. The seed mussels and technical supervision will be provided by the local laboratory of the Central Marine Fisheries Research Institute. This approach can again be replicated all along the coast.

Small-scale industries, khadi and village industries, handicrafts, sericulture, etc. also possess considerable potential for self-employment. It is important that these activities be helped to quickly achieve self-reliance and to restrict the element of subsidy. However, their real sources will depend upon the organisation of the following vital ingredients :

(a) steady supply of raw material of the right quality and at economic prices;

(b) provision of designs that can be adopted to keep pace with changes in consumer demand;

(c) maintenance of strict quality control on the end product; and

(d) organisation of producer's marketing societies that leave them with the maximum share of the profit.

'Small is Beautiful'

A special effort has been made to get research scientists to suggest how best the technology developed in their laboratories can be used to help develop operational projects which are economically viable and capable of replication. Some of the ideas thrown up by the scientists include cultivation of geranium flowers pyrethrum flowers and mushroom, upgrading of local non-descript quota; systematic programme of coconut replanting combined with scheme for intercropping, mixed cropping and mixed farming; schemes for growing fishes in fresh water reservoirs and paddy field and a scheme for developing industrial estates based on marine fisheries. "Small is beautiful". It is only by insisting on the design and implementation of small replicable projects which can really benefit the poorest sections of the community that the integrated rural development programme can develop the dimensions of a mass movement.

A portfolio of well-defined and carefully costed projects can then be entrusted for implementation to the most appropriate non-official or official agency in the area. Such a "Task Adoption" approach will enable each of these agencies to monitor its own contribution in qualitative and quantitative terms according to a well defined milestone chart. At present, there is a trend towards adopting the village as a whole which confounds the implementing agency with a universe of problems and leads in the end to dissatisfaction and despair. Instead, each agency will adopt

only that task for which it possesses the necessary expertise, i.e. medical, educational, agricultural, veterinary, industrial, etc. The programme as a whole should however be a coordinated and integrated one. In this way, the unique capabilities of each agency/organisation can be integrated with certain universal principles and goals.

The success of the programme will depend primarily upon the calibre of the staff deployed for its implementation. Apart from a small core of staff permanently posted in the project area, the rest can consist of specialists deputed to handle specific short-term assignments. The field of rural development holds out great promise for the organisation of a Rural Resource Corps of young professionals who have volunteered to serve the rural area for a minimum period of 2—3 years. Experience has shown that there are many young persons with a sense of idealism and dynamism who would be willing to give some years of their life to rural development before entering upon their regular careers. Young doctors, engineers, agricultural scientists, veterinarians, social and home scientists and others could function as professional interns of completing well-defined tasks.

Rural Resources Corps

Apart from a careful scheme of recruitment and training, the members of the Rural Resource Corps should be deployed in selected villages, in carefully chosen groups of 3—4 persons in order to provide a blend of expertise and to help each other in the unfamiliar rural environment. These volunteers have a specific contribution to make in spreading the latest scientific and technological developments in the fields of agriculture, agro-industries, nutrition, supply of drinking water, primary health care and energy supply. They can help in training a cadre of soil health-care workers drawn from local educated youth. Simple kits can be designed for taking regular soil samples and a link can be established with specialist staff working outside the project area in well-equipped laboratories. A project for the development of a cadre of Soil Health care workers initiated by ICAR two years ago is making good impact in the villages where it has been introduced. Similarly, volunteers can help in building up a cadre of animal and plant health-care workers; introducing improved practices for conserving and using water resources; new techniques of fish culture, energy supply; recycling of waste products etc. Volunteers can also help in building up local farmers' organisations so that group initiative can be used in handling common management tasks, e.g. crop planning, varietal choice, soil, water and pest management, grain drying, storage and marketing. Young married couples would be ideal for serving as members of the Rural Resource Corps.

In conclusion the aim of any I R D programme should be to promote the generation of opportunities for gainful employment through the optimum use of locally available resources. The programme will have to be developed with the help of the participant groups and its success or failure should be measured by human rather than strictly economic yardsticks, Antyodaya, or benefit to the poorest sections of the community in addition to ecological considerations should be the sole criterion for determination of priorities. Further, the methodology of implementation should provide opportunities for everyone interested in rural development making a contribution through the adoption of well-defined tasks.

Guiding Principles

The guiding principles of a scientific rural employment regeneration movement may be summed up as follows :—

1. Improvement in the quality of life and purchasing power of the most under-privileged sections of the rural poor will be the sole criterion in the determination of priorities in programme formulation and implementation;

2. Contribution to productivity, rather than receipt of a dole, will be mechanism for improvement in purchasing power;

3. The creation of unique show-pieces involving massive external inputs of money, manpower and technology will be avoided; instead, programmes which will catalyse self-propelling and self-replicating growth, leading to the conversion of a small programme into a mass movement, will be developed with the help of the people concerned;

4. The techniques of science introduced will be based on low-cost, relevant and small-scale technology using sound principles of ecology and economics;

5. The reversal of the drain of brain and resources from village to the town will have to be brought about by providing organised opportunities for educated youth and young professionals to participate in the process of development. Through the deployment of a Rural Resource Corps of young professionals, a cadre of trained local youth can be built up for taking the tools of science to the rural areas;

6. The immediate task of all universities, scientific and technological institutions should be the compilation of integrated resource inventories bringing together data on the developmental assets and liabilities of each area. This will enable the preparation of a portfolio of projects which can help to convert the endowments of each area into wealth meaningful to the rural poor;

7. The developmental opportunities revealed by the resource inventory should be further classified into: (a) those which lend themselves for Government action such as irrigation, supply of drinking water, communications, etc., and (b) those which can lead to self-employment. Priority should be accorded in the choice of those projects which can help persons below the poverty line ;

8. The pattern of administration of the project should be such that it can provide opportunities for every agency-official and non-official to make a contribution.

In the ultimate analysis, a nation's strength depends on its human resource. We are fortunate to be blessed with a vast human resource. The potential of this resource for converting our equally rich national endowments into wealth meaningful in day to day life remains at present largely untapped. Here is the challenge as well as the opportunity for those wanting to participate in the task of launching a self-propelling and self-replicating pattern of rural development. □

Rural Industrialisation

M. R. Kolhatkar
Managing Director, MSFC

UPLIFTMENT OF agro-based rural economy of India requires not only modernisation of agriculture but also a tremendous thrust of industrialisation. The employment opportunities in agricultural sector are limited and in no case can this sector absorb the increasing labour forces in rural areas. The industrial activities have till recently remained, for obvious reasons of economies and convenience, confined to urban areas and that too in selected cities only. As it is, the pace of industrialisation in the country till mid-fifties had been rather slow. It is only since the launching of second Five Year Plan that industrialisation gathered momentum in the country. Particularly the entry of public sector in heavy industries and institutional assistance provided to small scale industries have contributed greatly to the rapid pace of industrial development in the country. However, still a vast geographical area in the country has remained devoid of industry. Thus in the absence of industries and other secondary and tertiary activities to absorb the increasing work-face and also to augment the incomes in rural areas, the migration from these areas to urban and industrialised places has increased manifold particularly during the last two decades.

Decentralised development

To promote a decentralised industrial development, the Central as well as State Governments have devised and are implementing various schemes. Through these schemes, the efforts are also made to foster a broad-based and widespread entrepreneurial class so that along with industrialisation the gains of such development can penetrate a large number of people from the different sectors of the society.

The financial requirements assume a crucial importance in any industrial project. It is also an accepted fact that the lack of finance has been an important factor responsible for slow growth of industries in the country. Under the SFCs Act, 1951 all State Financial Corporations are to provide long term financial assistance to small and medium scale industries. They have a very critical role to play in the process of rural industrialisation and may have given a noteworthy performance during the last decade and a half in promoting a decentralised industrial development in the State.

Financial Assistance

Though State Financial Corporations have no special scheme for industries in rural areas in the strict sense of the term as defined for the census purposes, under their various schemes the Corporations have given a preferential treatment to industrial projects coming up in backward and developing areas. The Corporations offer financial assistance to industries in the specified backward and the developing districts. The interest rates in the specified backward districts is lower than the normal institutional rate and margin (promoter's contribution) stipulated by the Corporations particularly under their schemes for educated unemployed and technocrat entrepreneurs. Further, three out of the 13 specified backward districts are eligible for 15 per cent Central cash subsidy. Thus to an entrepreneur proposing to start an industrial unit in the backward areas, finance may not be much of a problem provided the project is otherwise economically viable.

During the last sixteen years (1962-63 to 1977-78) the MSF Corporation has sanctioned financial assistance to Rs. 170.31 crore to 11741 industrial units in Maharashtra. In this, the share of specified backward districts has been 30 per cent (3085) in number of projects and 26.36 per cent (Rs. 44.89 crores) in the amount. Considering the fact that these districts had hardly any standing in the industrial map of Maharashtra State some years back, this is a no mean achievement. It is also important to note that over the period, the share of backward districts has been increasing from 10.53 per cent in 1962-63, the share in the total amount sanctioned has risen to 31.60 per cent in 1976-77 and 35.36 per cent in 1977-78.

Backward Area Development

The increasing trend of the sanctions to industries in the backward districts by Corporations does indirectly indicate the increasing pace of industrialisation in hitherto non-industrialised places. This process has been a result of multiplicity of factors. In addition to the financial assistance by the Corporations and also its sister institutions, the efforts of respective Regional Development Corporations have been notable. The availability of Central cash subsidy has been another factor attracting industries to these areas.

Along with promoting industries in the backward areas, the Corporations encouraged them by providing financial assistance, to a number of industrial units in places with small population. As of 31st March, 1977, there were 4189 industrial projects under the financial assistance from the MSF corporation alone. These projects were located in all, 586 places--2538 projects in 26 district headquarters, 653 projects in 134 taluka places and other towns and 998 projects in 426 villages.

New Industrial Policy

The new industrial policy statement of the Central Government has emphasised the need to promote small and rural industries for a dispersed industrial development. Many new policies to this effect are on anvil and the existing institutions are likely to be further activitated and strengthened to accomplish this objective in the shortest possible time. However, the experience so far has shown that to have a sustained industrial development, the basic economic principles of industrial location should not be ignored. As the things stand, the rural areas can prove a flourishing ground for industries which have strong linkages—backward or forward—with the area. Thus except for heavy industries capable of creating their own econo-

mies, the new industries in rural areas which have scope are agro-based industries such as Khandsari, dal mills, rice mills, solvent extraction plants, and industries based on local raw materials.

Skilled Man-Power

Another important factor inhibiting the growth of modern industries particularly engineering industry in rural areas is the non-availability of skilled workers. In the rural areas the supply of skilled workers is limited mainly for two reasons. First, within these areas there are little facilities to create the skills required in modern industries and secondly, the trained people from urban areas find these places unattractive from the point of view of social and cultural activities. Infrastructural facilities such as roads, electric power, water supply and communication facilities are yet to be developed in a large number of rural areas in the country, in the absence of these amenities it is difficult to visualise flourishing industrial projects in rural areas. However, the State of Maharashtra is comparatively well placed in this respect and progress in rural electrification and road construction in the State is quite satisfactory.

The Corporation has been making all possible efforts to extend financial assistance to every eligible industrial project. Over the period, there have been many important modifications in the organisational and operational parts of the Corporation working to facilitate the needy entrepreneurs. All the State Corporations hope to play an important role in the new agency of District Industries Centre which is designed for promoting decentralised rural industrialisation. □

Dairy Development for Rural Prosperity

M. N. Khan
Joint Commissioner,
Ministry of Agriculture and Irrigation

OPERATION FLOOD is a national project for integrated dairy development. It involves an outlay of Rs. 485 crores over a period of seven years and is expected to be completed by 1985. Roughly half the financial resources required is expected to be generated by harnessing the proceeds of sale of dairy commodities to be donated by the European Economic Community ; these commodities will be principally utilised for reconstitution into liquid milk for partially balancing seasonal fluctuations in local milk production and the funds generated will be utilised entirely for investment in infrastructure and inputs essential for providing the basis and generate the forces necessary, for the sustained growth of milk production About Rs. 70 crores are expected to be provided by the World Bank and the balance will be met from the internal resources of the Indian Dairy Corporation and, if necessary through budgetary support by the Government. The project has recently been sanctioned by the Government of India The National Dairy Development Board and the Indian Dairy Corporation will implement it in close co-operation with the concerned State Governments.

The programme will tentatively cover about 155 milk-sheds in the districts identified by the National Commission on Agriculture to be appropriate, on the basis of their potential for milk, for a modern dairy industry. They are located in 17 States The project will also link these milksheds with 148 cities, which will be the chief consuming centres, with a population of more than 1,00,000 each. The essence of the project is an increase in milk production in the selected areas through improved health and feed cover for the milch animals, an increase in the size of the improved milk herd through measures aimed at genetic improvement, an assured remunerative and stable price for milk to the producers, facilities for organised collection and transportation of milk from producing areas to processing units, increase in processing capacities and the adoption of suitable marketing strategies, for ensuring the supply at fair prices, of good quality milk to consumers in the 148 cities. In a broad sense, the project is intended to benefit 10 million farm families and will encompass a national milch herd of about 15 million The total milk production may increase in the sixth plan period from about 27 million tonnes per annum to around 35 million tonnes per annum as a result of Operation Flood II and other supporting programmes in the dairying sector expected to be taken up by the States. The per capita availability of milk will increase from the present level of 107 gms. per day to about 148 gms. per day by 1985. The benefited farm families are expected to secure substantial increases in their cash incomes.

Three tier co-operatives

If it is possible to identify any one component as the most important single component of the project, it is the large scale creation of an institutional framework for the socio economic improvement of the milk producers most of whom are small or marginal farmers and landless labourers. This institutional framework is the three tier co-operative structure consisting of milk producers forming a co-operative at the village level, a number of such societies federating into a union at the district level to own processing facilities, and roughly 6 district unions on an average, federating into a cluster federation to function as the apex co-operative body determining policies and practices for the smooth and effective functioning of the constituents The primary society will not only collect the milk from the producers but also provide the members with essential feed and technical inputs for maintaining a steady increase in milk production. The district union will ensure the processing of all the collected milk and the apex body will administer the uninterrupted flow of the products into the regional and national milk grids

The National Dairy Development Board and the Government of India were encouraged to develop this ambitious project because of the spectacular success achieved in dairying by the co-operative model, known as the Anand Model, and the considerable gains secured by the NDDB|IDC through the implementation of Operation Flood I. The Anand model consists of the three layers of co-operatives which were mentioned earlier. The evolution and successful functioning of these co-operatives and their results conclusively established the operational validity and feasibility of the co-operative organisation as a means for the progressive amelioration of the economic conditions of the weakest sections in the rural areas. The system generated a legitimate sense of pride in their profession in the small men; it brought them together in the common enterprise of converting their liquid milk into steady cash incomes; it created conditions for the breakdown of caste and other socially divisive barriers; it provide them with a platform for the articulation of their various talents including leadership qualities and organisational skills. In brief, it was as nearly perfect an instrument as human ingenuity could devise for effecting spectacular socio-economic transformation of the rural areas with its focus on the poor.

The Primary society will not only collect the milk from the producers but also provide the members with essential feed and technical inputs for maintaining study increase in milk production.

Operation Flood I decided to replicate the Anand Model. It was to be financed from funds generated by the sale of commodities to be donated by the W.F.P. It decided to set up Anand type co-operatives in 17 districts and channelise the milk from those areas, through a modern dairy system, into the four major metropolitan cities of Madras, Calcutta, Delhi and Bombay. In comparison to Operation Flood II it was a limited project; its main focus was on the replications, on a small scale, of the Anand type co-operative, an organisation of procurement of milk from rural areas, arrangement for its processing and thereafter marketing in the major areas of demand. In other words the main thrust was on procurement, processing and marketing.

District Unions

District unions have been set up in all the 17; installed capacities of the dairies in the four cities have been increased to about 28 lakh litres per day; there are about 5000 primary co-operative societies benefitting about one million farmer families. It is estimated that these families have secured between 50 and 100 percent increase in their cash incomes. The dairies in the four cities were collecting about 6 lakh litres of liquid milk per day before Operation Flood I, now they are collecting over 11 lakh litres per day. It is obvious that given political will and administrtive support, it is possible to extend the Anand experiment successfully on a much larger scale Another heartening feature has been the growth of the NDDB &IDC into premier multi-disciplinary organisations with the proven capability of executing integrated dairy development projects with competence, imagination and innovativeness.

This creation of a sound basis and foundation for a widespread large scale replication of the Anand Model was the principal stimulus for the formulation of Operation Flood II project. The project has been prepared, scrutinised, appraised, discussed and finalised over the last 18 months and they were discussed with the State Governments. The proposal has been examined by the concerned Ministries in the Government of India, it has also been subjected to the rigours of a project appraisal by the World Bank. It has now finally emerged as a national project with an appreciable measure of enthusiastic support and consensus of the States

Reduction in Milk Powder Imports

It would be well to refer briefly to a feature of the project which is not usually adequately appreciated in some quarters leading to unfounded apprehensions and criticism. It has been said that the programme is likely to increase dependence on import of skimmed milk powder. This is incorrect. It is worth mentioning that imports of milk powder have, on an average, remained around 1 percent to 1.5 percent of the total milk production of the country. In physical terms imports of milk powder which were around 55,000 tonnes in the early 1960s came down to a level of 28,000 tonnes in 1974-75 and around 14,000 tonnes in 1977-78. On the other hand indigenous production of milk powder has increased from around 12,000 tonnes in 1967-68 to nearly 50,000 tonnes in 1977-78. The projected imports of S M.P. in the Operation Flood II period will be around 28,000 tonnes per year which in milk equivalent will represent about 7 5 lakh litres per day whereas even the existing capacity in the organised sector is around 86 lakh litres of milk per day. The limited imports are used essentially as a trigger for dairy development activity by channelising the generated funds into the provision of a basic infra-structure for a modern dairy industry.

Future Plan

The Operation Flood II project will have a major role in the context of the development strategy underlying the draft Sixth Plan for the attack on poverty, through full employment. On a conservative estimate, there are around 35 million households which cannot depend on co-operative husbandry alone through their limited operational holdings for a viable economic activity yielding the desired levels of income, even taking credit for the improvement likely to be brought about by a vigorously implemented programme of redistribution of land surpluses. It is in this context that the major contribution expected to be made by OF II by directly benefitting 10 million farm families has to be appreciated. The programme will have to be integrally linked with other programmes for transfer to and creation of productive assets for the rural poor like the S.F.D A. and other target group oriented schemes.

Training and development of man-power for successfully implementing the project will be a major area of concern for the N.D D.B. For all this and the administrative and policy support essential for the progromme, the State Governments will have to play a significant role. ☐

Planning for the Common Man

Dr. R. K. Sinha
Secretary,
Indian Economic Association,
Pilani

THE EMERGENCE of the Janata Government at the Centre is the single most important event in the post-independence socio-political and economic history of the country. Study of the impact of this phenomenon on the economic policies of the Government is both interesting and inspiring. The economic strategy, policy and policy instruments of the past thirty years have been found wanting in social content and discarded. A new economic strategy, policies and policy instruments are on the anvil.

In fact, it was no easy task. A sincere, pragmatic approach was called for. And it is clear from the various documents that the Government has steadastly gone about the task in a perceptive and realistic fashion. The economic policy has, in fact, been passing through many stages and a congnitively coherent, and operationally implementable document in the form of the Draft Sixth Plan has emerged.

Gandhian Socialism

The ruling party is of the view that there is need to develop an alternative both to capitalism and communism. It believes in treading the path of Gandhian socialism based on political and economic decentralisation. By and large it believes in creating a society largely based on self-employment It is opposed to any system which is based on exploitation. It desires the widest possible dispersal of ownership of property and means of production. As a matter of fact its opposition to all concentration of economic power stems from this basic premise.

Industrial Policy

The 'Industrial Policy Statement' of the Government of India as of December 1977 lays emphasis on the employment-oriented, labour intensive, capital-economising small scale sector. The Government of India feels that so far the emphasis of industrial policy had been mainly on large industries resulting in neglect of rural, cottage and small scale industries The new industrial policy therefore, envisages :

(i) reservation of an additional 324 items for exclusive development in the small scale sector.

(ii) creation of a focal point in district headquarters for development of small and cottage industries, and

(iii) curbs on setting up new industrial units around large metropolitan and urban areas.

Besides, the policy also seeks to guide the growth of the large scale sector on well demarcated lines

For the past two decades, the Government policy in the sphere of industry has been governed by the Industrial Policy Resolution of 1956. While some of the elements of that Resolution in regard to the desirable pattern of industrial development still remain valid, the results of actual policies in the industrial field have not always been upto our expectations. The new Industrial Policy has been framed to realise the genuine aspirations of the people within a fixed time.

Floor and Ceiling Approaches

The Draft Sixth Plan envisages a strategy of the 'floor' and the 'ceiling' approaches in order to ensure that everybody comes to a certain specified level Thus the major thrust in the plan will be on achieving substantial progress towards the aims of full employment, eradication of poverty and the creation of more equal society. The Draft Plan proposes, therefore, that the principal objectives of planning should now be defined as achieving, within a period of 10 years, :

(i) the removal of unemployment and significant under-employment.

(ii) an appreciable rise in the standard of living of the poorest sections of the population,

(iii) provision by the state of some of the basic needs of the people in these income groups like clean drinking water, adult literacy, elementary education, health care, rural roads, rural housing for the landless and minimum services for the urban slums.

According to the Draft Sixth Plan document these objectives would be attained by :

(i) achieving a higher rate of growth of the economy than in the past,

(ii) moving towards a significant reduction in the present disparities of incomes and wealth and

(iii) ensuring the country's continued progress towards self-reliance.

The plan document indicates four areas of emphasis in achieving these objectives. They are agriculture, cottage and small scale industries, area planning for integrated rural development and the provision for minimum needs.

Employment Strategy

The employment strategy of the Sixth Plan as envisaged in the draft document is

(i) to adopt an employment intensive sectoral planning,

(ii) to regulate technological change to protect and enhance employment and

(iii) to promote area planning for the full employment.

A substantial amount of additional employment will be generated by the expansion of irrigated agriculture and the largely expanded allied sectors of dairying, forestry and fisheries. The plan also envisages to generate employment through the expansion of intrasturcture and social services.

By and large, the draft plan document proposes a strategy as a result of which the percentage of people below poverty line will be reduced substantially.

Budget

The budget of a government is its financial blueprint for a specified period for carrying out its policies and programmes. The government looks upon the budget as an important tool for reaching the cherished socio-economic goals. The objectives of the party in power as well as of the government determine decisions on how much to spend ; on what programmes to spend and in what manner the resources are to be allocated. It has been indicated earlier that the concern and commitment of the Janata Government has been to deliver the masses from grinding poverty Let us now examine how far they have succeeded in implementation of these policies through budgetary instruments.

The outlay on the Annual Plans of the Centre, States and Union Territories has been fixed at Rs. 11,649 crore as against Rs 9,960 crore in 1977-78. This represents an increase of 17 per cent. Out of this Rs. 10,465 crore has been allocated for continuing schemes, Rs. 150 crore for new power projects, and Rs. 1,034 crore for schemes under other sectors. Out of Rs. 1,034 crore allocated for other sectors Rs. 828 crore is accounted for by agricultural and other schemes subserving the development of rural areas.

In keeping with the emphasis on agriculture and rural development, the plan outlay for agriculture has been raised by Rs. 490 crore to Rs. 1754 crore for 1978-79. In particular the outlay on command area development has been stepped up from Rs. 49 crore in 1977-78 to Rs. 82 crore in 1978-79 and that of small farmers agency in the central plan from Rs. 45 crore to Rs. 115 crore in 1978-79. The outlay on the drought prone area programme has been raised from Rs 51 crore in 1977-78 to Rs. 76 crore for 1978-79. The desert development programme is being allocated Rs. 20 crore for 1978-79 as against only Rs. 6 crore in 1977-78.

As a part of the new strategy for rural development, a massive programme for dairy development, better known as Operation Flood II is being launched to raise the nutritional standards of the people, generate employment for about 4 million people in the first phase and augment the incomes in rural areas through a viable subsidiary occupation. Operation Flood II will cost Rs. 500 crore.

As a part of the new strategy for rural development it is necessary to accelerate the construction of all-weather approach roads and the provision of drinking water facilities in the villages. The outlay on rural roads in the States' plans has been stepped up to Rs. 115 crore in 1978-79 as against Rs. 85 crore in 1977-78. The provision for rural water supply in the states' plans will be Rs 105 crore in 1978-79 as against Rs. 70 crores in 1977-78. This will be supplemented by a special provision in the central plan to the extent of Rs. 60 crore.

For improving the opportunities for gainful employment in the rural areas emphasis has been laid on the development of rural and small scale industries. For the year 1978-79 provision has been made for Rs 219 crore as against Rs. 145 crore in 1977-78. In this connection it is worthwhile to mention here that block development plans will be a major instrument for achieving full employment in rural areas.

Special impetus has been given to the programmes for the welfare of the scheduled castes and other backward classes. The outlay for such programmes has been increased from Rs 86 crore in 1977-78 to Rs. 125 crore in 1978-79. The outlays in the states' plans for tribal development has been increased from Rs. 228 crore in 1977-78 to Rs. 343 crore in 1978-79. In addition, the amount of special central assistance for tribal sub-plans has been stepped up from Rs. 55 crore in 1977-78 to Rs 70 crore in 1978-79.

An ambitious programme for creating an additional irrigational potential of 17 million hectares has been drawn up by the government for the coming Five Year Plan. Of this eight million will be under major and medium irrigation and nine million under minor irrigation To achieve this target the outlay on medium and major irrigation projects for 1978-79 will be Rs. 1,166 crore as against Rs. 1,032 crore in 1977-78. For minor irrigation, the plan outlay will be Rs. 235 crore as against Rs. 206 crore in 1977-78. It is expected that an additional irrigation potential of 3 million hectares will be created during 1978-79 as against 2.23 million hectares in 1977-78

It is believed that inadequate allocations in the past for power and the leisurely pace of execution of electricity projects have led to a chronic shortage of this basic infrastructure facility. Therefore, the plan for 1978-79 envisages a massive addition to generating capacity and the development of the transmission and distribution system. A sum of Rs. 244 crore has been provided in the central plan for this purpose. The outlay in states' and Union territories plans, which account for bulk of the provision for power, add upto Rs. 1,953 crore In other words, the provision for the power sector would be Rs. 2,217 crore during 1978-79 as against Rs 1,925 crore during 1977-78. In view of the importance of rural electrification, the

provision for it has been raised to Rs. 297 crore as compared to Rs. 195 crore during 1977-78.

To sum up, for the first time in many years the States and Union territories plans together will be larger than the Central plan. There has been an increase of 19 per cent in the outlay of State plans, 27 per cent rise in the outlay of the Union territories plan and 15 per cent rise in the outlay of the Central plan. By and large this reflects a significant and impressive reordering of our plan, priorities in favour of agriculture, irrigation, power and rural development

Larger Investment

For removal of unemployment, elimination of distitution and alleviation of poverty, it is necessary to step up investment in the field of agriculture, including processing, storage, transport and distribution and related activities like animal husbandry, dairy, fisheries, forestry and employment intensive industries particularly cottage and small-scale industries. This implies that outlays on irrigation, power, agricultural production and other necessary infrastructure for agricultural development should be considerably higher. The pace of development of cottage and small scale industries also needs to be stepped up Special emphasis is also to be laid on basic amenities and services to the rural areas.

After analysing the budget for 1978-79 one comes to the reassuring conclusion that it marks the first step towards achieving the objectives set for itself by the government. By and large throughout in the budget an earnest attempt has been made in this direction. As a result, investment priorities have been modified and more and more emphasis has been laid on rural development. The plan allocation for the first year of the next Five Year Plan has been made keeping in view the immediate needs of development and to achieve benefits from the investments made in the past in the shortest possible time as well as to create more employment opportunities.

In the words of the Finance Minister, "The goal of the budget is to set in motion a process of sustained increase in output and employment, particularly in the rural areas." As the main instrument for achieving these goals is the programme of government expenditure on investment, the government appears to have acted wisely in framing its budget under review and the plan stipulations.

The history of our economic policy so far has been the history of our failures to eradicate poverty and unemployment. Ours is a great nation on which Nature's bounty has smiled. Unfortunately, man's incapacity to benefit from it has landed us in the swamps of poverty and unemployment. □

District Industries Centres: Constraints and Contradictions

Subhash J. Rele
Freelance Journalist

The rationale behind giving due recognition to the district as the focal point of decentralised development is a sound one. The Asoka Mehta Committee which has submitted its report has also pointed out that "the district has been the pivot of local administration for centuries." The Government is pinning a lot of hope on the success of the District Industries Centres launched recently. These centres will, for the first time, take the focal point to the district level and thereby act as catalysts for rural industrialisation. The small entrepreneur will not have to waste time in going through the administrative procedures to get clearance for his industrial units. Nor will he have to run to the state capital for his various needs. DICs will take care of all these requirements It will be the responsibility of DICs to ensure that all clearances are obtained and handed down to him across the table On the face of it, this looks a very tall order. The question is : Is entrepreneurship development so easy ? The Government's move is motivated by the best of intentions but it will have to do a lot of home-work to get the desired results

Proper Perspective

In their proper perspective, DICs have been conceived with a certain purpose—the purpose being that industries must move to rural areas, industries must become labour-intensive and relate to the needs of the people One however gets the impression that the Government is trying too much too fast The Government proposes to cover all the districts in the country, to the extent possible, by the end of this year. Till today, the Governmen had approved more than 215 DICs in different States The emphasis appears to be somehow to reach the largest number of districts ; quality of service offered has been relegated to the background

Laudable Objectives

The objectives of the scheme are laudable since the DICs are expected to provide under one roof various services required by entrepreneurs to start industries. The Centres will help them to prepare project reports, obtain land and credit from financial institutions and banks, get the sanction for electricity and procure raw materials and machinery. The DICs are expected to help entrepreneurs to prepare project reports. One is not sure if these services will be given free of cost. In many States, the DICs undertake to prepare feasibility reports with the help of consultants who have specialised in different fields. The entrepreneurs have to pay only 25 per cent of the cost and the balance is contributed by the Government.

Many in the Industries Ministry are credited with the view that the DICs should be put on a sound statutory basis. They argue that the legal backup to DIC would go a long way in clearing some of the regulatory and procedural cobwebs blocking the way of industries coming up in the villages. Too much must not be read in the attempt made at amending the Industrial Development Act with a view to regulating in a proper manner rural-based industries in a big way Mr. George Fernandes, the Industries Minister, claimed that there had been "an enthusiastic and magnificent response" from the State governments to the proposal. He described the scheme as "novel and revolutionary" and remarked that it would help the country to achieve faster progress in developing and diversifying industries Whereas some State governments have shown interest in implementing the scheme, some seem divided in their pessimism Some have given more than a nod but less than a binding commitment. Most of the State governments at the moment are just busy disseminating information among entrepreneurs about the prospects in the districts It must be said that there are several loose ends to be tied up. There is a tendency to look at DICs in isolation and not as a part of the totality of the economic scene. One thing must be remembered that DICs can perform their task successfully only when the overall climate for investment improves and there is an increasing demand for industrial goods. At present the recessionary conditions persist in many industries. This will prove a stumbling block in the progress of DICs. One is also not sure how far the financial institutions are assisting the dispersal of industries There is a view that small industries have better prospects as ancillaries to the larger ones. In that case, the Government would be advised to follow a pragmatic economic policy. It is not easy to foster entrepreneur initiative in rural areas. It needs a detailed planning and local enthusiasm. Though everybody pays lip service to the small-scale and rural industries, their problems are not easily appreciated

There is hardly any innovative feature in the organisational set-up of the DIC. Each DIC will have a General Manager and seven functional managers to undertake tasks relating to economic investigation, raw materials, machinery, credit, research, marketing and other activities. Does not this smack of bureaucratic approach? Why implant urban managers on the rural soil? Mr. Fernandes has suggested that companies in the private sector may depute their experienced officials to work in the DICs. Unless these officers are thorouhly familiar with the problems of the districts and those of the small and village industries, they may not be able to perform their functions effectively. Why is the Government so keen to establish a "rural bureaucracy?

Close Co-ordination

The DIC is being delegated adequate authority from different departments and organisations both of the Central and State governments to take care of the requirements of small entrepreneurs The DIC will work closely with other agencies concerned like the State Electricity Board, the Municipal Panchayat Authority, other departments and other functionaries of the Government. Why this over-dependence on Government and government departments? It has been our experience that whatever our politicians touch is instantly politicised. How can DICs be free from this malady?

The Government wants public sector enterprises to formulate a time-bound action plans for the adoption of one or more DICs for stimulating a rapid overall growth of the districts. Are our public sector enterprises equipped for such a role? The criticism that DICs are merely a rehash of some of the Rural Industries Projects (RIP) programmes persists There are ample possibilities of things going sour The criticism allege that the DICs would also meet the same fate since those who were involved in the RIP programmes which failed miserably have been accommodated in the DICs. Secondly, DICs do not have project profiles as per the resources and skills available locally If one is not too careful it can lead to results quite contrary to what it is supposed to produce.

There are already several agencies and institutions connected with the development of small-scale industries. What is needed is their proper co-ordination. It is time to bring a sense of direction of all our efforts and weave the various aspects into the plan of action. The authorities will have an inexhaustible fund of readymade excuses to offer if the DICs fail A policy of hastening slowly might prove beneficial. Since decentralised production is the lyngh-pin of Janata's growth strategy, the new experiement should not be allowed to fail. The success of the Government's new thrust in the direction of the small, the decentralised rural industralisation will depend upon the performance of DICs. □

DICs are expected to provide under one roof various services required by enterpreneurs to start industries. Each DIC will have a General Manager and seven functional Managers to undertake tasks relating to economic investigation, raw materials machinery, credit research marketing and other activities.

Khadi and Village Industries for Rural Development

A. N. Prabhu,
Economic Times

IT IS a truism to say that India lives in its villages Indian villages by tradition lived a life free from outside help. This continued till the invasion of modern technological innovations inflating man's demands and increasing his economic dependence on urban region. The secret of self-sufficient Indian villages it is said, has been their well-developed cottage industries. A model village produced what it wanted, from clothes to honey, from pots to pullies to draw water from wells The village iron-smith has been a much loved person. He produced, from the well-chiselled statue to glazed pottery to intricate wall-paintings which brought a sense of pride to every Indian heart. Cottage industries, therefore, were the mainstay of the Indian rural economy. The objective of raising the standard of living of people, therefore, would naturally mean encouragement to rural artisans. India has already laid the necessary infrastructure for the purpose. The Khadi and Village Industries Commission, a successor to the then all-India Khadi and Village Industries Board, was formed 19 years ago, charged with the responsibility of promoting and developing khadi and village industries in the country.

Progress

Promotion of village industries also meant spreading employment opportunities. Because they are highly labour intensive. What has to be ensured is creation of the necessary base for the rural artisans to work and secondly to see to it that their products are properly marketed and consequently the artisans are not exploited.

The Commission has expanded its programme from just two states in 1955-56 to 20 in 1977-78. Its registered institutions rose from 242 to 628. The cooperative societies rose from 62 to 27,071.

A slight setback suffered by the organisation is clear from the fact that the budgetary provisions for the commission, which was Rs. 22 36 crore in 1971-72 came down to Rs 16 02 crore in 1973-74 The allocation for 1976-77 was no more than Rs 28.82 crore The budget provision, however, increased to Rs 44.65 crore in 1977-78 and again to Rs. 65.73 crore in 1978-79—representing a three-fold increase over the level prevailing in 1971-72.

Statistics at best can be indicative of growth but never a guide to the progress in the field. They, however, show how the emphasis has been shifted Village industries production increased from Rs 172 crore in 1976-77 to Rs. 198 crore in 1977-78. Khadi production increased from Rs. 56 crore to Rs. 65 crore. In 1978-79, khadi production is expected to exceed Rs 77 crore and overall village industries production to Rs. 266 crore.

What is heartening is the slow but steady increase in the production of village industries. This has opened up job opportunities to lakhs of people. Employment in khadi is expected to go up from 8.5 lakh in 1976-77 to 10.5 lakh in 1978-79. Likewise, employment in village industries is also expected to rise from about 11 lakh to 16 lakh during the same period.

There is a renewed pledge on the part of the government to give encouragement to village industries. This is clear from the industrial policy statement laid in Parliament.

Village industries alone can give an assured income to our people in the sprawling countryside. An estimate shows that earnings from khadi and village industries rose from Rs six crore to Rs 80 crore. Pumping purchasing power among the poor in the village is the sina qua non for development. While the organised labour in urban areas wrest concession after connession through intense bargaining, the unorganised masses in the rural areas have so far been mute partners in development.

The development of Khadi and village industries is a sure way to set matters right. Effort is made to make improved varieties of tools available to the village artisans so that their efficiency by way of increased and quality output is improved.

Need for research and development

It goes without saying that there is need for greater research and development efforts in village industries. It is all the more great because the benefit of research would be shared by a larger number of people. The Commission has identified new fibrous raw materials such as banana fibre and screw pine fibre for making fancy and utility articles and tree-borne major and minor non-edible oilseeds for industrial uses. It has found modern method for fuller utilisation of dead cattle and production of a variety of things such as bone meals, poultry feed, guts and glue in addition to proper use of hides and skins Scientific bee-management and production of special varieties of handmade paper to meet particular demand may go a long way in helping the people in the villages

Quiet Revolution

A quiet revolution is round the corner with the introduction of ambar charkha for spinning cotton yarn of finer counts. A comprehensive scheme of interest subsidy for institutional financing of khadi and village industries and a raw materials bank for various commodity groups are other areas which may give a boost to the vital programme.

The world's attention is now drawn to the gobar gas scheme which may provide an answer to the energy crisis on the one hand and to villages' needs for fuel. It may provide housewives the comfort of smokeless 'chula'

The extensive use of non edible oils for industrial purposes will help solve the problem of edible oil for human consumption Making this oil will help provide large scale job opportunities to unskilled people in the villages

Problems

A breakthrough in rural employment and under-employment may be reached if the Commission can break the twin problems of lack of marketing facilities and adequate finance A third problem is of inade-

quate supply of raw materials at reasonable prices throughout the year. Fourthly the violent fluctuations in the prices of finished product of village industries should be avoided.

The Commission may have to function as a control room in these areas. It must have adequate monitoring cells all over the country to know the problems of each and every unit and take prompt remedial measures.

Sky is the limit

Sky is the limit for the development of village industries. It has a variety of areas to develop--from silk products to blankets, match boxes, leather products and more. Strict quality control should be the guiding principle of the commission. There should be no relaxation on this count. The commission could as well set up a raw materials bank on the lines of the organised sector. It could supply raw materials and collect finished products and market them all over the country through a network of showrooms.

Khadi evokes in one's mind not just a piece of cloth that the Father of the Nation wound round himself. Khadi is a symbol of independence and self-reliance, of the rural poor and of the hope of the millions for the future. In it lies the future of the nation. No effort should be spared in accelerating the pace of its growth. Once the vicious circle of the lack of raw materials, lack of credit facilities and fluctuating prices is broken, the way will be clear for our brethren in the villages to get assured income and ensure a quality of life as well for the next generation at least. ☐

Carpet Industry in Jammu & Kashmir

A. N. Bhardwaj

Deputy Principal Information Officer, Srinagar

CARPET MAKING has been one of the traditional industries in Jammu & Kashmir but till recently the production and its share in the export trade had been at low key. Judging by the fact that of the total annual export of carpets worth about Rs. 77 crore from India, Kashmir's share is a paltry Rs six crore, it can safely be said that the position even now is not a very happy one. Only five years ago, the State had just about 4000 weavers producing carpets worth about Rs 2.5 crore annually. But with the efforts now being put in to revitalise the industry, the change is already there for everybody to see.

The short-fall in the export of carpets from Iran in the recent years, caused by her increasing attention on diversification of Industries, has thrown open more avenues for the Indian carpets in the world market. Since the quality of the Persian carpet can only be matched by the one made in Kashmir, it was felt that the gap in the world market could, to a large extent, be filled by India.

Earn while they learn

It was in the light of this background that the Government of India launched a massive programme in 1975-76 to train weavers in Uttar Pradesh and Jammu & Kashmir. The programme envisages training of 10,000 persons in J&K State alone. About 3,500 have been trained and the remaining 6,500 are undergoing training at the moment, at different centres in Kashmir. About 75 per cent of the trained personnel have already been employed in different carpet weaving factories. The training is for one and a half years, during which the trainees get a stipend of Rs. 60 per head per month. About 200 such training centres, of which more than half are training-cum-production centres, have already been set up in different parts of Kashmir Province. Some more centres are likely to be set up this year. The cost for each centre, with an in-take capacity of 50 trainees, has been estimated at Rs 1.75 lakh a year.

Although the programme is spread over the entire province, for the sake of convenience in running the centres more smoothly and effectively, each of the three districts has been placed under a separate agency. While the Srinagar District is handled by the J&K Handicrafts Export Corporation, Anantnag and Baramulla districts are being looked after by the two Government of India agencies--the All India Handicrafts Board and the Handloom & Handicrafts Export Corporation, respectively.

Baramulla district, which had only five centres at the time of launching the scheme, has about fifty-eight centres at the moment. Out of these, sixteen which completed the training period of one and a half years have been converted into Production Centres and the remaining 42 continue to function as training centres. The earnings of the weavers at the Production Centres range from Rs. 150 to Rs. 400 per month. During 1976-77 the trainees produced about 22,000 sq ft of carpets in Barmulla district alone.

The J&K Government, which has exclusive jurisdiction over the Srinagar District, handles about sixty training-cum-Production Centres. It also proposes to set up 20 centres in Jammu division for the production of Mirzapuri carpets.

Anantnag district has eighty eight centres, besides the one in Leh (Ladakh) being run by the All India Handicrafts Board. With an emphasis more on the training, the centres in Anantnag district have also made considerable progress. The All India Handicrafts Board proposes to carry out a survey to assess the utility and impact of the plan in the rural areas.

It is indeed an ambitious plan and as a result of its implementation, the production of carpets in the State is expected to go up to about Rs. 13 crore in the next three or four years.

Among the countries to which the Indian made carpets are exported at present on a large scale are Germany, United States, Australia, United Kingdom and some European countries. ☐

BOOKS

Working Capital

WORKING CAPITAL MANAGEMENT
By V. E. Ramamoorthy.
Published by Institute for Financial Management and Research Madras 60034, Revised edition 1978 *Pages xvi* 348 *Price Rs.* 50).

IN TWELVE CHAPTERS of this book, the author has discussed with abundant clarity and adequate illustrations the different facets of working capital in relation to the corporate sector. This edition includes a couple of new chapters while the rest of the chapters have received treatment so as to enlarge and improve their contents.

Working capital, in common parlance, is the amount of funds which a company must have to finance its day-to-day operations. In other words, it is that proportion of the company's total capital which is employed in short-term operations Financial manager in a corporate enterprise has the onerous task of maintaining a sound working capital position. In the business setting, the current assets constantly change composition, but the level of current assets and current liabilities in relation to the level of business activity of the company and the rate of which the current assets review and direction of the finance manager

The book has elaborately dealt with issues like forecasting working capital requirements, funds statements and their analysis, cash management, inventories trade credit, etc. A chapter on the discussion with reference to the Tandon Committee Recommendations is highly stimulating and with a refreshing contrast The author has also explained the need for and the methodology for estimating working capital on the part of banks It is argued that by spelling out the norms and mechanics of landing and at the same time, advocating a flexible approach, the Tandon Study Group has placed the banker in an unenvitable position. He has the guidelines but the pace and mode of implementation have to depend on his judgement, discretion and appreciation of the status of his clients

The book will be well received at the hands of financial managers Its bibliography is quite adequate

Navin Chandra Joshi

Christian Missionaries

The Missionary Among the Khasis by Nalini Natarajan, Sterling

Publishers Pvt. Ltd Pages 212; *Price Rs* 50

INDIA IS a vast land with some of the most colourful people inhabiting certain far flung areas. Very few sociological studies of these people have been conducted on scientific lines. In this connection, useful work has been done by the Christian missionaries but they have often been maligned. There is lack of proper evaluation of their activities.

From that point of view, Mrs. Nalini Natarajan has done good service in choosing the subject of missionaries among the Khasis for her doctorate from the Bombay University. Since she spent over a decade among them, she has written from personal knowledge. The Speaker of the Meghalaya Legislative Assembly, Dr R S Lyngdoh, in a Forword commends the book "for its scholarship, its lucidity and its contribution modern sociological approach "

Dr Natrajan has tackled the subject with understanding and sympathy Recently the Government of India have banned proselytising in some backward areas. That need not prejudice us against the useful work done by some of them, specially in providing medical and educational facilities to an otherwise ignored class of people. It is a matter for introspection as to why well-reputed institutions like the Ramakrishna Mission and Sivananda Asharam have not been able to win over the people who preferred to follow an alien religion

Faces speak for themselves. During the past one decade, the number of Khasis converted to Christianity has considerabley increased. In 1961, the population of Christians was 1,45,000 which in 10 years rose to 2,48,000 —a growth of 71 per cent as against the all-India average growth of Christians during the decade of 32 60, percent The first Christian missionaries reached the place around 1841 Initially, they faced many culties which might have disheartened persons of weaker mettle Once the missionaries broke the ice, by persuasion, devotion and perseverence they slowly won over and consequent literature, and raised them to new levels of knowledge and understanding.

In the fields of education medicine and arts like music, an impartial evaluator has to acknowledge the services rendered by missionaries. In the removal of cobwebs of untenable myths superstitious and fears afflicting the Khasi minds, the work of missionaries stands out as the prime mover and major catalyst It resulted in the conversion of more than half the Khasi population The process of conversion continues despite restrictions Dr. Natrajan observes, "there is no evidence in the Khasi Hills to show that the missionaries applied any unfair methods, force or coercion to bring about conversions "

In fact, they appeared at a time when many superficial aspects of Khasi *Niam*—the traditional law—was already being questioned That provided suitable ground for imparting new ideas—and the missionaries did it with vigour and persuasion

When the *Seng Khasi* movement meant to revive old cherished values started gaining ground, some of the enlightened missionaries were quick to adjust and did not feel any compunction in meeting the *Seng Khasis* half way This gave rise to a new type of Christianity which incorporated a number of traditional values of the Khasis The Khasi leadership under Rev. J. J. M. Nichols Roy, himself a convert, activity participated in the independence struggle and welcomed the integration of Khasi States in the India Union. Only one *sviem* wanted an independent status for his area and when he did not succeed, he left India for East Pakistan.

(Contd on cover III)

Drinks and Drugs

Drug Abuse in India : A Report of the National Committee on Drug and Drug Addiction, *Ministry of Health and Family Welfare, New Delhi, Pages* 82.

ABUSE OF intoxicants has been a feature of all societies. Famous historian Toyanbee had remarked : Intoxicating drinks have brought about the destruction and downfall of nineteen out of twenty one civilizations. There are several instances in history when drink evil has brought major national debacles. Marshall Petain of France, while broadcasting the story of his nation's collapse before Germans said : 'Our soldiers drank and could not fight.' The drink and drug evil is ruinous for a person, his family, the community and the country. Makers of our Constitution had also foreseen these evils and that is why they kept prohibition of consumption of intoxicating drinks and drugs injurious to health as one of the Directive Principles.

Even though we have a tradition of abstinence and prohibition on the use of intoxicants is favoured by our national leaders, there has been marked increase in the use of intoxicating drugs over the years. To study the problem of drug abuse in the country from all angles, Government of India had constituted a National Committee on Drug Addiction two years back. From the evaluation of studies already conducted and also by making use of various materials and methods, the Committee has prepared this report. It covers various aspects of drug abuse viz magnitude of the problem, preventive and controlling measures, treatment of addicts and social rehabilitation.

Pattern and Prevalence

The report reveals that drugs mainly abused are alcohol, opium and cannabis. Use of psychotropic drugs viz L.S.D. etc is not of that magnitude which is existing in western countries. The number of regular users of drugs is also quite small This small proportion, the Committee attributes to our traditions which exert refraining forces. Caste, religion and local customs are aso found to pay a significant role in either promoting or controlling drug abuse. The rich and poor are both prone to this vice although social contexts differ. Also, alcohol, which was an anathema to higher castes in India is now becoming fashionable as the educated individuals are adopting western life styles.

The Committee has discovered that prevalence of drug abuse (especially Opium) is more in Punjab than in other rural areas of the country. In general public alcohol and drug addiction is maximum in the age group 35-54 years. Psychotropic drugs are more frequently used in metro-cities and by the student community.

To relieve tensions and get relaxation is found to be the top reason of falling prey to drugs. The studies have also brought to fore the fact of hard-core addicts Within this hard-core, alcohol addicts are in maximum number.

Alcohol and tranquilisers are liked most by the student community. Drug abuse exists even in students of secondary school stage. The most vulnerable time is around seventeen years or immediately after entering the college/university. Public school education and hostel institutions are socially favourable circumstances in going for drug abuse, the Committee opined. The study also reveals that drug abuse is more prevalent among students who come from affluent and educated families.

Will the drug abuse increase in future ? According to the report, easy availability of drug, want of greater freedom especially by the young ones and changing acceptabilities and increase in the tempo of life are the pointers indicating the increase of drug abuse in future. The Committee feels that well planned studies are to be organised and repeated periodically.

The third Chapter of the report deeply discusses the drug-individual society interaction. How a man starts taking drugs, in this regard it is mentioned that the immediate effects of drugs (viz. relief of pain, increased activity etc) lure an individual. He repeats the use to re-experience the feeling earlier had. This is done inspite of clear knowledge of the harmful effects of drug.

Prevention and Control

The Report deplores the linking of drug abuse with revenue raising. Social attitudes which influence an individual to large extent should also form an integral part of drug problem, is one of the recommendations. To curb the problem, some legal and penal measures have been proposed. These include legislation of a single law for the prevention and control of abuse of narcotics or psychotropic drugs. Report recommends re-examination of the extent punishments available under law and making them more deterrent where necessary.

To meet the problem of drug addicts, opening of approved centres for users of all dependence producing drugs has been mooted. The Committee strongly feels that education and social measures, along with the medical treatment of drug addicts can help in solving addiction problem. To create a rational public opinion on drug problem, importance of the role of mass-media has been recognised.

'For every pound we spend at the present time in protecting the health of the people, we squander five in undermining it.' How far these words of Late Lloyd George, former P. M. of England are true in our context cannot be overstressed.

The report has tackled and analysed the problem of drug abuse from all sides. To sum up, the problem can be treated not as an isolated deviance but in its entirety.

R. K. Bhatnagar

Christian Missionaries

(*Contd. from page* 33)

Khasis call themselves to be the chosen people of God. In the Khasi language *Kha* means born and *Si* refers to an ancient primeval mother. Hence the literal transalation would be 'born of the mother'. Khasis are a matri-centre society where women enjoy a lot of power and prestige. Like the Khasi mother the youngest daughter in the family acts as a keeper of the religion of the family and also its priestess. Khasi marriage has a spiritual basis but divorce is accepted as unavoidable in certain cases. It was common among the early Khasis and was granted by the village assembly. Khasi hills are situated among the sub-Himalayan ranges of the eastern frontier of India. The area of this region is approx, 3690 sq. miles and was described as "the Scotland of the East' 'by David Scott in his Memories.

There is repitition of certain material and the reproduction of photographs is hazy.

Baldeo Sahai

Regd. No. D(D)-152

Development Notes

Electricity for 2000 Villages

THE RURAL Electrification Corporation has given green signal to 33 new projects of about Rs. 25 crores. Under these projects, involving a loan assistance of over Rs. 13 crore, about 2000 new villages in eight States will be electrified. These States are Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan Tripura, U.P. and West Bengal. Thirteen new schemes have been sanctioned for the development of backward areas. For this the Corporation will provide a loan assistance of about Rs. 4.68 crores under the revised minimum needs programme.

Other important feature of the new sanctions is to energise about 15000 irrigation pumpsets in over 1300 villages. By this agricultural production gets a further boost in about six states. This energisation programme, under 31 special projects agriculture schemes, will be jointly financed by REC, commercial banks and the Agricultural Refinance Development Corporation costing over Rs. 8 crores.

Rural electricity network will be strengthened in Andhra Pradesh, Gujarat, Haryana, Maharashtra, Punjab and Tamil Nadu. For this, the corporation has sanctioned 13 new projects and will give a loan assistance of over Rs. 8 crore to the State electricity boards. As a result it is hoped that the power supply conditions will improve and over 26 million units of energy will be saved every year. This saved power will be utilised for providing more connections to new customers.

With this the REC has so far sanctioned 2272 schemes, involving a loan assistance of over Rs. 882 crores. The irrigation pumpsets to be energised under the REC schemes has crossed one million mark. In addition power will be provided to overall 1.4 lakh small scale industrial units and over 34 lakhs domestic and commercial connections in rural areas. The number of street lights to be provided has increased to over 7 lakhs. REC has already disbursed around Rs 500 crores for the implementation of its projects □

Dyeing Diamonds

INTERESTED in colour diamonds? Bhabha Atomic Research Centre (BARC) can supply blue or green diamonds by using a novel "gun" to shoot charged atoms (ions) at a tremendous speed.

The nuclear physics division of the BARC has developed the gun to change the colour of a diamond to a beautiful green or blue by shooting the ions into the precious stone. Coloured diamonds command high prices.

The Ion has been used to produce solar cells which are being tested for space application. The "ion implantation gun", as is called by the scientists, shoots 'ions' several times heavier than hydrogen at 400,000 volt energy into material as hard as diamond

The usual method to make solar cells is to heat the silicon to about 900 degree C and diffuse gallium atoms into it. But this gun has successfully been used to shoot high speed gallium ions into silicon.

The ion gun has been built at a cost of Rs. 4 lakh while similar facilities abroad cost 10 times more.

In western countries the device is an essential tool in the industries manufacturing semi conductor devices. The electronic industry in India is expected to get a boost with the "ion-implantation gun" □

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

yojana

RAILWAY BUDGET 1979-80
ECONOMY IN 1978-79
CENSUS 1981

YOJANA

Volume XXIII Number 5

25 Phalguna, 1900

16 March 1979

Published on behalf of the Planning Commission In Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor : P. C. Roy

Editor : N. N. Chatterjee

Assistant Editors: P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :
AHMEDABAD . Raman Patel
BOMBAY Avinash Godbole
CALCUTTA · S. K. Ray
HYDERABAD B N. Murthy
MADRAS : T. R Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai
Photographic Officer : K S Nagaraj
Artist—P K. Sen Gupta

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. Telegraphic Address: Yojana, New Delhi. Telephones: 383655, 387910, 385481 (extensions 402 and 420) Circulation: Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.00 Two Years—£ 4.50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy—£ 0.12 or $ 0.25

Editorial

A Laudable Railway Budget

The railway budget for 1979-80, according to the critics, carries the sting in its tail. The upward revision of freights and fares, expected to yield an additional revenue of Rs 178 crore, will affect badly the consumers and commuters. Viewed realistically, the sting is not lethal, it is only a new pinch symbolising fresh move for expansion and development by the railways.

Levy of a supplementary charge of 5 per cent upto 500 kms and 10 per cent beyond 500 kms on all goods traffic except salt, should normally have a marginal effect on the prices of both essential consumer articles and raw materials for industry. The details given in the explanatory memorandum prove the point. If the calculations go wrong, the fault will lie in all probability on the distributive channel which is yet to conform to the concept of distributive justice as spelt out in the Draft Plan (1978—83) Or it would be due to agencies other than railways.

The abolition of the special fare table for second class (ordinary) passenger valid for distance upto 50 kms will not affect the passengers badly The increase in fare per journey will range only from 5 paise to 25 paise, with no charge upto 10 kms There will also be an end of the prevalent abuse of the concessional fare by a number of passengers who split up their journey into parts of 50 kms and buy single journey tickets for each part separately

As regards the rise in suburban and non-suburban season ticket fares, it is undeniable that the existing fares are incredibly low A second class monthly season ticket, for example, valid for a distance upto 5 kms costs at present only Rs 3.90, equivalent to only 13 single journeys as against 50 journeys normally performed in a month by a ticket-holder The steep increase by 80 per cent in one leap will surely upset the users But the fact remains that for nearly two decades the revision in season ticket fares has not taken place pari passu with increases in costs and in other fares Meanwhile there has been a steady increase in the losses suffered by the railways on the suburban services over the years A situation has emerged when every addition to the number of suburban trains to cope with the growing traffic adds to the losses. As such, a rise in fare for this category of passengers stands to reason It will also break the vicious circle of low fare and resultant stagnation The quantum of increase would have been higher if the budget proposal followed the recommendations of the interim report of the Rail Traffic Enquiry Committee In fact such sudden steep rise in passenger tickets could be avoided if there was no immediate need to clear the accumulated debris of past neglect

Apart from the additional impost which in any event will not be liked by the consumers and commuters who will have to pay extra for the goods and tickets, the budget is both courageous and laudable This is the third surplus budget in a row In the last two years the Railways had netted a handsome surplus of Rs 80.32 crore and Rs 126.33 crore. Despite considerable increases in the costs of materials consumed by the railways, fares and freights had been maintained at the same level for the last four years in regard to passenger fares and three years in respect of goods traffic. The budget for 1979-80 is expected to yield a net surplus of Rs 88.49 crore after bridging the gap between the receipts and expenses.

Judged by the yardstick of performance, the railways have done well during 1978-79. Heavy floods, extensive breaches and washing away of bridges besides immobilisation of wagons due to strikes in ports could not deflect the total transportation task undertaken by the railways. Improved level of operations, better record in relation to accidents involving casualties, greater sense of security resulting from deployment of escorts on trains running through vulnerable areas and comfortable journeys for second class passengers provide ample indications that the promises made now will match the performnce in the year to come. ☐

Gandhi And The Child



... now concentrated on stuffing children's minds with all kinds of information without ever thinking of stimulating and developing them. Let us now cry a halt and concentrate on educating the child properly through manual work, not as a side activity, but as the prime means of intellectual training.

Mere book knowledge does not interest the child so as to hold his attention fully. The brain gets weary of mere words and the child's things it ought not to do, the eye sees the things it ought not to see, the ear hears the things it ought not to hear, and they do not see or hear, respectively what they ought to. They are not taught to make the right choice and so their education often proves their ruin. Children inherit the qualities of the parents no less than their physical features. Environment does play an important part, but the original capital on which a child starts in life is inherited from its ancestors.

Our children must be made to pay in labour partly or wholly for all the education they receive.

We labour under a sort of superstition that the child has nothing to learn during the first five years of its life. On the contrary, the fact is that the child never learns in after life what it does in its first five years The education of the child begins with conception

I am convinced that for the proper upbringing of children the parents ought to have a general knowledge of the care and nursing of babies.

The Economy in 1978-79

PRICE STABILITY AND RECORD FARM PRODUCCTION

3.5 PER CENT RISE IN GNP EXPECTED

STEADY RISE IN FOREIGN EXCHANGE RESERVES

THE PRE-BUDGET Economic Survey presented to the Parliament has described the performance of the Indian economy as most encouraging in 1978-79.

The Survey states that the growth impulses generated in 1977-78 have been carried forward to the current year and the economy is well set on the path of growth. A growth rate of 3.5 per cent in the Gross National Product is expected in the current year and according to the Survey this is not an inconsiderable achievement coming as it does on the top of a very high rate of growth of 7.2 per cent in 1977-78.

Agricultural production will be marginally better than last year's record production despite devastating floods over large parts of the country.

Food stocks are expected to increase to 20 million tonnes and supplies of other essential consumer items like sugar, edible oils and fibres have been satisfactory.

A remarkable aspect of the performance of the economy in the current year is the relative price stability, despite the substantial rise in money supply This has been achieved through a restrictive monetary and credit policy as well as skilful supply management. Between March, 1978 and December, 1978 the wholesale price index shows an increase of only one per cent.

Industrial Production

Industrial production has shown a remarkable recovery in the first eight months of the current year and for the year as a whole, the rate of growth is expected to be about eight per cent Capacity utilisation has increased substantially throughout the system

The inability to utilise foreign exchanges reserves has been overcome and under the liberalised import policy essential consumer and producer goods have been imported However, the worsening of balance of trade noticed since last year has be n continued in the current year This is both because of a significant rise in imports and a short deceleration in the rate of growth of exports In the first eight months of the current year exports are lower than in the same period 1977-78 Nevertheless foreign exchange reserves show an increase of Rs 582 crore till the end of January, 1979 because of a continued growth in non-export receipts, though at a slower pace.

Growth of Agriculture

The Survey has laid emphasis on crop planning more research, better extension, more comprehensive purchase and price support arrangements as the possible way out for overcoming shortages of pulses, oil seeds and fibres. It has commended the progress made in extending irrigation and has suggested the need for taking up more expeditiously minor irrigation and large and medium irrigation. While commending the package of measures taken to improve agricultural production such as, extension of irrigation, hybrid seeds, fertilizers, support prices, agricultural credit etc. the Survey has strongly advocated the need to expedite land reforms, tenancy reform and consolidation of holdings.

Expressing anxiety over the growing industrial unrest, the Survey has attributed this in many cases to inter-union rivalry. The Survey suggests that in a developing economy, cooperation among different sectors of the society to increase the national cake is as important for raising the standard of living of the people as to claim a larger slice of it by anyone section for itself.

Referring to the basic problem of unemployment in the economy the Survey points out that though agricultural growth would absorb a good number of unemployed, the balance which is sizable needs to be provided employment in rural and small scale industries. However, the Survey finds that the progress has not been what it shoul not be and finds that the progress has to be solved through a better supply and marketing organisation and developing an appropriate technology which can utilise the abundant manpower and greater access to credit

Need for taxation

Commenting on the views expressed in some quarters that Governmental expenditures should be financed through buoyancy in revenues than from imposition of additional taxation, the Survey points out that the economy has not grown sufficiently rapidly so that it could finance its development through buoyancy of taxes alone. Therefore, it observes, that there seems to be no escape from increasing the level of taxation.

The Survey pleads for putting a check on the growth of population and points out that unless urgent attention is given to the limitation of the members through an intensification of family planning all the efforts at development may not lead to any perceptible change in the economic conditions of the people.

Gross National product up

The Survey has estimated the growth in Gross National Product at 3.5 per cent in 1978-79 as against

7.2 per cent in 1977-78. Although industrial growth will be about eight per cent, agricultural growth will be only nominal as the achievement last year was a record 13.9 per cent.

Both savings and investment as a proportion of GNP are expected to be better in the current year as against 22.4 per cent and 21.3 per cent respectively in 1977-78 and the discrepancy in savings and investment would also narrow down further in 1978-79.

Crop Prospects Bright

Reviewing the agricultural prospects for 1978-79, the Survey anticipates the kharif crop to be about the same level as in 1977-78 despite devastating floods in many parts of the country. On the other hand, the prospects for rabi crop, appear to be brighter. The roduction of foodgrains might exceed the target of 126 million tonnes. Among commercial crop, cotton is likely to exceed the record crop of 71.6 lakh bales reached in 1974-75. Groundnut and other oil seeds are also expected to fare equally well. In spite of flood damage raw jute crop might exceed last year's production level.

The Survey, has observed that even after making allowance for good weather conditions, the trend in agricultural production in recent years indicates the strengthening of the country's productive potential and its tendency to stabilise at higher levels. In this context, the Survey has drawn attention to the substantial increase in production of wheat and rice in States which are not traditionally producers of these cereals. But the position of pulses and cash crops like oilseeds and even cotton still continue to be unsatisfactory despite remunerative support prices and therefore, calls for further steps to raise their production through intensification of research. Similarly, there is a need to divert land to these crops from others whose output has stabilised at high levels. Though sugarcane production has increased appreciably under the impact of high State-advised prices, the benefit of such prices has not accrued to all cane growers. Sugarcane being a water-intensive crop, has also brought about an imbalance in the availability of irrigation water to other important crops and thus, calls for a better crop planning.

The steady improvement in agriculture has been attributed to the increasing irrigation potential, particularly minor irrigation, spurt in fertiliser consumption, production and use of quality seeds, increased institutional finance for agriculture and price support schemes. In 1977-78, 2.6 million hectares are estimated to have been brought under irrigation, while the target for 1978-79 is 2.8 million hectares. Fertiliser consumption in 1978-79 is likely to be higher than 4.29 million tonnes of fertilizer consumption in 1977-78. The Survey has laid particular emphasis on implementing land reforms, tenancy reforms and consolidation of holdings and has called for expeditious distribution of land declared surplus.

Industrial Production

The Survey estimates that the rate of growth in industrial production in 1978-79 would be about eight per cent, as compared to the growth rate of 3.9 per cent during 1977-78. It is substantially higher than the average of 4.8 per cent for the period 1970-71 to 1977-78.

Impressive recovery has been recorded in electricity generation which is up by 12.9 per cent in the first nine months of the current year. Other industries which have shown significant improvements are **food manufacturing, beverages, electrical** and **electrical machinery, metal products, paper** and non-paper products and chemicals and chemical products. Textiles which had showed sluggish growth in the earlier years, have improved their performance by recording a growth rate of 5.9 per cent. The industrial group to have suffered a set-back is the manufacture of transport equipment which shows a decline of 1.8 per cent. Two major sectors causing anxiety are coal mining and steel. The former was affected by floods, the latter by power shortage. However, the former has since recovered from the ravages of the floods and the output of mini steel plants has compensated for the decline in the latter.

Public Enterprises

Public sector enterprises have recorded a growth rate of seven per cent in the first eight months of the current year, although the performance has not been uniform in all units. Shortfalls have occurred in units like Cement Corporation of India, NEFA Mills, Modern Bakeries, SAIL, Hindustan Copper, etc. However, good performance has been achieved in units like BHEL, HMT, National Instruments, Scooters India, Hindustan Organic Chemical, etc. A noteworthy feature in respect of public enterprises is that the capacity utilisation has been showing steady improvement in recent years in a large number of units and in 1977-78 this shows further improvement. In some cases like Hindustan Zinc, near full capacity has been reached. On the other hand, some units like Bharat Opthalmic Glass, Bharat Heavy Plates & Vessels, etc. have reported low capacity utilisation.

The Survey's assessment regarding industrial investment is that there is clear evidence of step-up in private investment in the first half of the current year Disbursements by term lending institutions, capital goods licensing, growth in the consumption of Cement and steel, response to FRA companies flotations etc., all indicate an optimistic outlook on the part of private investors.

Appraising the significant policy developments in the industrial sector during the current year, the Survey observes that the sugar decontrol should help the sugar industry to stabilise itself, while the integrated textile policy is intended to bring harmonious balance between the use of cotton and synthetic fibres. This will also help the handloom and khadi sectors because of the freezing of the weaving capacity of the organised mill and powerloom sector.

The Survey has expressed concern over the continuance of sickness in several industries and has particularly invited attention to the huge locking up of bank credit as a result of growing sickness in both large and small-scale industries' units. The Survey has again emphasised the urgent need to find a solution to the problem faced by such units

Price Stability

A notable feature of the Indian economy, accordinging to the Survey, is the remarkable stability in the price level. The wholesale price index shows just one per cent increase between end-March, to December, 1978. Significantly, food articles were somewhat cheaper although prices of pulses showed an increase of 3.1 per cent. However, the movement in consumer price index in this period presents a contrast to the whole price index by advancing from 321 in March 1978 to 335 in December, 1978 thus registering an increase of 4.4 per cent.

It is noteworthy that the price stability has been iieved in spite of considerable degree of monetary pansion. This has been possible through skilful ply management of essential commodities through ports and better distribution arrangements.

On the policy side, there has been conscious movent towards reducing rigidities which controls bring their wake. Abolition of dual pricing policy for minium is a notable example in this regard. Sugar ontrol is yet another example cited in the Survey. wever, the policy has for its main objective the inase in production of all essential commodities and refore, suitable policy measures such as price intives, appropriate changes in export and excise ies, distribution control modifications, raw mate- allocations, etc have been followed. Where indiious production falls short of domestic demand, ial imports as in the case of edible oils, raw rubber, l cement have been allowed to keep prices stable. availability of food stocks and foreign exchange erves have provided the means to pursue a stable e policy

Rural Bias in Budgetary Outlays

The Survey has highlighted the rural bias in the lgetary outlays through higher allocation for rural ift and development in 1977-78 and 1978-79 lgets of the Central and State Governments. A nificant feature of the budgets to which pointed ntion has been drawn in the Survey is the reorder- of priorities in keeping with the new strategy of nning which has laid emphasis on eradication of verty and unemployment particularly in the rural as. Budgetary out turn for 1977-78 (Revised imates), shows an increase in budgetary deficit of ntral and State Governments to Rs. 1134 crores cause of some shortfall in tax revenue and non-uti-ition of the borrowings from the Reserve Bank inst foreign exchange reserves as well as lower ernal assistance receipts On the other hand, elopment expenditures have increased by Rs. 600 re

States' Plan outlay up

A distinguishing feature of the budgets for 1978-79 the larger share of States' plan outlay in the total n outlay which has been stepped up by 17 per cent Rs. 11,649 crores. Tax efforts of the State Govments in the current year have been unsatisfactory much so the Centre had to raise substantial resources additional taxation to meet the increased plan lay. However, tax policy has taken care to proe sufficient incentives for savings and investment l selective reliefs to small-scale industries and rural velopment activities Import duty on machinery ded by certain selective industries has been reducfrom 40 per cent to 25 per cent.

Further progress has been made in rationalising the -structure following the recommendations of the r Committee on indirect taxes and the Choksi mmittee on direct taxes

Seventh Finance Commission

Referring to the substantial devolution of resources the States recommended by the Seventh Finance mmission, the Survey hopes that this should help tes to avoid overdrafts from the Reserve Bank l bring better balance to their finances The libesation of assistance towards financing expenditure natural calamities allowed to be spent by State vernments and debt rescheduling are expected to ng much needed relief to the State budgets

Performance of Public Sector Undertakings

After showing encouraging results in their performance during 1976-77, the Public Sector undertakings have shown a slide back in 1977-78. Their net profits have declined from Rs. 476 crores in 1976-77 to Rs. 236 crores in 1977-78. The Survey has called for an improvement in their working through better utilisation of capacity as well as by following an appropriate pricing policy for their products if they have to achieve the target of surpluses earmarked for them under the Plan to step up public sector saving to finance the Plan.

Money Supply Expansion halted

The Survey reports the success achieved in restricting monetary expansion through monetary and credit restraints. As a result, money supply growth was lower at 14.7 per cent in 1977-78 as against a record increase of 20.3 in the previous year. This has been achieved despite large expansion of credit to government sector and a record increase in the net foreign exchange assets of the banking sector. There was, however, a sharp drop in food procurement advances of Rs. 206 crores, though non-food credit showed considerable increase at Rs 1906 crores. There was a spectacular increase in deposit growth of 26.4 per cent in 1977-78, thus adding to the liquidity of the banking system In consequence while gross credit deposit ratio was lower at 58 9 per cent, investment deposit ratio was higher at 35.6.

Commercial Banks' Credit

In the current year deposit growth was rather sluggish to begin with, but later picked up. However, banks credit to commercial sector till January 12, 1979 has been very substantial and net credit to Government on the other hand shows a smaller rise compared with last year, while increase in net foreign exchange assets has been less than half of last year's increase. Since money supply expansion till January 12, 1979 by 12 0 per cent as against 8 1 per cent last year, has been rapid in the current year, several restrictionary measures such as curtailment of refinance facilities and increase in statutory liquidity ratio have been taken by the Reserve Bank to slow down monetary expansion.

Priority Sector lending

An important step taken towards the end of last year, the impact of which will be felt in 1978-79, is the reduction in interest rates charged to various categories of borrowers, particularly those belonging to priority sectors. Likewise, rates on term deposits have also been reduced. Priority sector lending has also shown considerable improvement in the first eight months of the current year which is higher by Rs. 533 crores than an increase of Rs. 444 crores last year. In particular, incremental direct lending to agriculture has shown a sharp rise by more than 60 per cent. At the end of March, 1978 priority sector advances constituted 28.4 per cent to total gross bank credit.

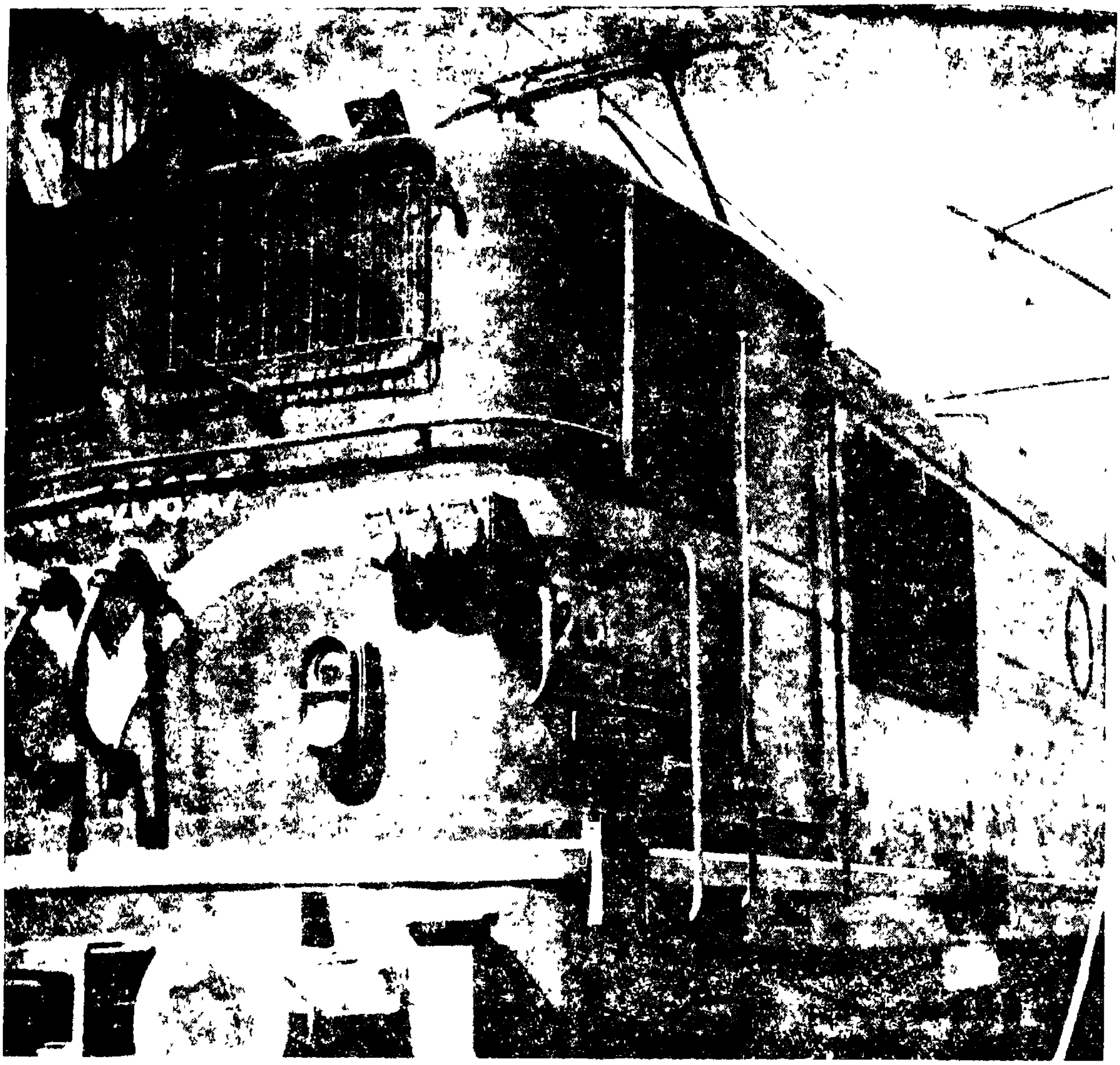
In view of the large expansion in money supply which has taken place over the last three years, the Survey has emphasised the need to continue monetary and fiscal discipline.

Rise Foreign Exchange Reserves

The Survey notes that following import liberalisation, imports showed a substantial increase of 19.6 per cent in 1977-78 compared to a decline of 3.6 per cent registered in 1976-77 In contrast, exports which were registering handsome rates of growth

(Contd. on page 11)

l DPD/78—2



Railway Budget 1979-80

No Increase in Passenger Fares

More Classless and Comfortable Long Distance Trains

THE RAILWAY Budget shows a surplus of Rs. 88.49 crore. Prof. Madhu Dandavate, Minister for Railways has put before the railways a stiff challenge of moving 222 million tonnes of originating revenue earning traffic during the year 1979-80 which is 17 million tonnes more than the revised target of 205 million tonnes for 1978-79. The projection of passenger traffic has also been made on a growth level of six per cent during the year.

Estimates for 1979-80

WITH THE realisation of these targets the railways estimate their gross receipts at the current fares and freight rates at Rs. 2,278 crore—Rs 113 crore more than the revised estimates for the current financial year. The working expenses have been placed at Rs. 1,828 crore—an increase of Rs. 142 crore over the revised estimates for 1978-79. Besides, more provision has been made for appropriation to Depreciation Reserve Fund—Rs. 200 crore as against Rs 45 crore in the current year. The appropriation to the Pension Fund has also been increased from Rs. 50 crore in the current year to Rs [illegible] crore in the next year

With these increases in working expenses and appropriation to Funds, the Budget for 1979-80 is expected to result in a gap of Rs 89 crores between the revenue and the working expenses after providing for full payment of an increased dividend of Rs. 245 crore to the General Revenues. But this will not enable the railways to meet the requirement of Funds for the expenditure chargeable to the Development Fund. The Development Fund expenditure, normally met from revenue surplus, is expected to be Rs 28 crore during 1979-80.

Revision in freight and fare in selective areas

UNDER THE circumstances, Prof. Dandavate has proposed a revision in freight and fares in selective areas which will not only bridge the gap between the receipts and expenses but also provide for increased quantum of developmental expenditure and contribute at least a part of the budgetary support required for the development programmes in the plan for 1979-80

RTEC Recommendatoins

The revision in fares and freights in selective areas has been proposed within the framework of the recommendations made in the interim report of the Rail Tariff Enquiry Committee (RTEC) headed by the eminent economist Dr. H. K. Paranjape. As recommended by Rail Tariff Enquiry Committee, the exemptions given to certain commodities from the levy of supplementary charge imposed in 1974 and 1976 will be withdrawn The Railways are expected to generate additional revenue of Rs 25.54 crore as a result of this proposal

The special fare-table for second class (ordinary) passengers, valid for distances upto 50 Kms, will be replaced by the regular second-class (ordinary) fares. The increase in fares, per journey on account of this will be marginal, ranging from 5 paise to 25 paise, with no change upto the first 10 Kms. This proposal will yield an additional revenue of Rs. 8.39 crore.

Prof. Madhu Dandavate said that the RTEC has recommended an increase in the monthly season ticket fares both for second-class and first-class. It has also been recommended that the first class season ticket fare should be four times that of the second class and the quarterly season ticket should be charged at 3 times the monthly season ticket fares. However, he would like to tone down the increase in season ticket fares recommended by the RTEC at the lowest segments of the distances upto 20 Kms. so that the season ticket fares are not increased as steeply as suggested by the Committee which would have caused distress to commuters. In view of this, the Railway Minister has proposed to reduce the recommended rates for the second class season ticket fares. The Minister has proposed Rs. 7 for the first 5 Kms. against Rs. 10 as recommended by the RTEC ; Rs. 11 for distance between 6 to 10 Kms. against Rs. 13 ; Rs. 14 for 11 to 15 Kms. against Rs. 16 ; and Rs. 17 for 16 to 20 Kms. against Rs. 19 as recommended by the RTEC. The RTEC's recommendation in regard to first class season ticket fares is being accepted without any change.

The proposed revision in the suburban and non-suburban monthly season ticket fares was expected to yield an additional revenue of Rs. 36.13 crore of which approximately Rs. 28.96 crore will be in respect of suburban tickets.

Metropolitan Railway-Projects

Rs. 16 crore are to be spent on the Metro Railway in Calcutta, from a total allocation of Rs 18 crore, for the Metropolitan Railway Transport Projects for 1970-80. The Metropolitan Transport Project in Bombay, gets Rs. 1.75 crores. The balance is meant for the projects in Delhi and Madras.

The Minister announced that a project for provision of electrified rail commuter services in the Delhi Urban Area at a cost of Rs 21.61 crores has been included in the Budget for 1979-80.

Concessions for Children

The Railway Minister announced raising of the age limit for free rail travel for children from three years at present to five years as a regular measure 1979 being the International Year of the Child Above this limit and upto 12 years of age, the existing concession of 1/2 fare for the children will, however, continue. He has also proposed alloting a specific amount from the outlay for Staff Welfare for play-grounds and parks for children in railway schools and colonies. During the year, the Railways will also organise or help in organising special educational and sight seeing tours for children.

Supplementary charge on goods traffic

IT IS proposed to levy a supplementary charge of 5 per cent upto 500 Kms. and 10 per cent beyond 500 Kms. on all goods traffic except salt.

All the above proposals including those based on the RTEC's recommendations will yield an additional revenue of Rs. 178 crore, an increase of about 7.8 per cent on the over all traffic receipts. With the help of

Railway Budget at a Glance

(Rs./Crores)

	1977-78 Actuals	1978-79 Budget Estimate	1978-79 Revised Estimates	1979-80 Budget Estimate
Gross Traffic Receipts . . .	2123.42	2219.86	2165.15	2456.15
Ordinary Working Expenses . .	1570.58	1700 90	1685.68	1827.83
Appropriation to D.R.F.	140.00	145.00	145.00	200.00
Appropriation to Pension Fund	39.35	49.20	49 20	64.00
Miscellaneous Expenses including cost of works charged to Revenue	20.70	26.51	27.06	30 40
Total Expenses	1770.63	1921 61	1906.94	2122.23
Net Revenue	352.79	298.25	258.21	333.92
Dividend to General Revenues . .	226.56	232 82	230.48	245.43
Net Shortfall (—)/Surplus (+) .	(+)126.23	(+)65.43	(+)27.73	(,)88.49
Operating Ratio	82.4%	85.4%	86 8%	85.2%

these proposals, the Railway Budget for 1979-80 was expected to yield a net surplus of Rs. 88.49 crore. Of this it is proposed to appropriate about Rs. 37 crore to the Development Fund and the balance will be appropriated to the Revenue Reserve Fund to reduce the Railways' debt liability to General Revenue.

The Railway Minister said that the Railways' indebtedness to the General Revenue will be Rs. 346 crore on April 1, 1979 comprising Rs. 188 crore in the Revenue Reserve Fund and Rs. 158 crore in the Development Fund. On April 1, 1980 this indebtedness would go down to Rs. 304 crore ; Rs. 146 crore in the Revenue Reserve Fund and Rs. 158 crore in the Development Fund. Prof. Dandavate pointed out that the debt liability in the Revenue Reserve Fund would be reduced to about Rs. 50 crore only if the recommendations of the Expert Group on Capital Structure are accepted by the Railway Convention Committee and approved by Parliament

Revised estimates for 1978-79

THE REVISED estimates of gross traffic receipts for 1978-79 were placed at Rs 2,165 crore against the Budget estimates of Rs. 2,220 crore, a reduction of Rs. 55 crore. The Working Expenditure will be Rs. 1686 crore as against Rs. 1701 crores in the Budget Estimates i.e. a saving of Rs 15 crores These estimates have been arrived at after taking into account the additional burden of Rs. 64 crore arising out of new levies imposed through the General Budget, payment of additional dearness allowance, increase in the price of steel and fulfilment of some pending staff demands. Besides, the damages due to the devastating floods in Northern and Eastern India together with the loss in earnings on this account amounted to about Rs. 30 crore. Despite these minus factors, the Railway Minister said that the year 1978-79 is expected to end with a surplus of Rs. 27.73 crore as against the Budget estimates of Rs. 65.43 crore. This surplus has been made possible through effective monitoring of expenditure and tighter budgetary control. The surplus is likely to go up to Rs. 38 crore as and when the recommendations of the Capital Review Committee are accepted by the R.C.C.

Annual Plan for 1979-80

THE MINISTER said that Rs. 650 crores have been allocated for the railways annual plan for the next year. This allocation is higher by Rs. 97 crore than the current year's revised outlay of Rs 553 crore

Agriculture-Oriented Lines

Keeping in view the Janata Government's new perspective in favour of rural development, Prof. Dandavate announced that in future agriculture-oriented new lines would also be considered as project-oriented lines claiming priority. In the past, project-oriented railway lines meant only industry-oriented lines.

Bangalore-Mysore Conversion

The Railway Minister announced that the gauge-conversion of Bangalore-Mysore line has also been included in the Budget. He said that there had been a pressing demand from the State of Karnataka as this conversion is considered essential for the development of industries in the Mysore area. The outlay on gauge conversion projects has also been increased from Rs 27 crore to Rs. 40 crore to speed up the completion of the ongoing projects.

The new Budget also makes provision for surveyes for three new railway lines from Kharagpur to Digha in West Bengal Kota to Chittorgarh via Bundi in Rajasthan and Manickgarh to Chandur in Maharashtra The final location survey for a new line from Jagadhri to Paonta in Haryana and Himachal Pradesh will also be undertaken during the budget year.

Electrifiction

It is proposed to take up electrification work on the highest densty trunk routes of Delhi—Mathura section of Central Railway and Vadodara—Ratlam and Godhra—Anand section (340 Kms.) on the Western Railway Besides electrification works on 948 route kilometres in three sections, Gudur—Madras—Trivellore on the Southern Railway; Vijayawada—Gudur on the South Central Railway and Waltair—Kirandul on the South Eastern Railway are expected to be completed in phases during 1979-80 and 1980-81 Also the suburban services between Madras—Gummidipundi and Madras—Trivellore will be energised very shortly and Electric Multiple Unit services wil be inroduced. Work has just been started on the electrification of Delhi--Mathura section.

The allotment for 1979-80 includes a provision of Rs. 288 crore for the rolling stock, an increase of Rs. 50 crore over the revised outlay for the current year. For the new lines Rs. 42 crore have been earmarked representing an increase of Rs. 11 crore over the revised out-lay for 1978-79. The allocation for passenger and other railway users amenities has been increased from Rs. 4 crore to Rs. 5 crore. The plan-head "Passenger and other Railway Users' Amenities" is also being split up from the year 1979-80, to show allotment of funds separately for 'Passenger Amenities' as distinct from 'Other Railway Users' Amenities'. □

The Economy 1978-79

(*contd. from page* 7)

since 1972-73 have slackened and recorded a small increase of only 4.6 per cent in 1977-78. In consequence, the trade balance turned into a deficit of Rs. 693 crore in 1977-78 in contrast to a trade surplus of Rs 69 crore achieved in 1976-77 Nevertheless, the country's foreign exchange reserves showed a record increase of Rs. 1885 crore (exclusive of IMF transactions), thanks to the continued buoyancy in invisible receipts.

Trade Deficit

On the basis of the data available for the first eight months of the current year 1978-79, the Survey observes that there has been a further deterioriation in exports which have recorded a decline of 2 3 per cent in this period compared to last year's performance during the same period Imports on the other hand are up by 21 per cent compared with last year. Consequently, trade balance shows a large deficit of Rs. 729 crore The large increase in imports have taken place in such goods like raw materials, intermediates and capital goods such as cotton, steel, non-ferrous metals, fertilisers, man-made fibres and machinery to sustain the growth in industrial production.

IMF Liabilities

The Survey points out that despite the deteriorating rade balance, the country has continued to add to ts foreign exchange reserves, though at a slower pace, after clearing all its outstanding debts to the international Monetary Fund The country's foreign exchange reserves as at the end of January, 1979 stood at the high level of Rs. 5082 crores (excluding gold and SDR's) although both export receipts and non-export receipts have shown a slackening trend. Nevertheless, the Survey has expressed serious concern over the decelerating trend in exports The Survey strongly emphasises the need to devise a strategy to stimulate growth of exports by continuing export assistance with appropriate adjustments and making exports an integral part of the strategy of development.

The Survey refers to certain problems facing the economy which need to be resolved expeditiously if the nation has to exploit the exceptional advantages now available to elevate itself to higher rate of growth. While the Survey expresses satisfaction in regard to the steady growth rate maintained in agriculture, particularly wheat and rice production following various improvements brought about in their cultivation, there has been no improvement whatever in the output of pulses, oilseeds and even raw cotton. Therefore, the Survey urges immediate attention to be given to increased research which will increase the yields of these crops. Also an aspect stressed in the Survey is to have a wide net-work of national marketing organisations to implement effectively price incentive schemes adopted to improve the output of these crops. The Survey tries to drive home the fact that amelioration of conditions of small and marginal farmers cannot be achieved by merely providing inputs alone. What is equally important is that the land reform, tenancy reform and consolidation of holdings have to go hand in hand.

In the industrial sector, the Survey has emphasised the need to step-up investment especially in the crucial sectors like coal, power, steel, cement and non-ferrous metals with a view to create additional capacities.

In regard to fiscal and monetary policies, the Survey has reiterated the need to follow a policy conducive to maintain price stability if the economy has to grow with stability. It has also pointed out the inevitability of resorting to additional taxation to finance our development for the simple reason that our economy has as yet not reached a stage where resources for development could be mustered through increased buoyancy of existing taxes alone.

The Survey expresses concern over the decelerating trend in the growth of exports. It recommends not to look upon exports as a way to sending out surpluses only. In view of the manoeuverability which growing exports confer on policy making, they should be an integral part of our development strategy. In this connection, the Survey has emphasised the need for developing agricultural exports as a part of our export strategy to help the economy of the farmers and to counteract the many restrictions imposed by developed countries on our exports of major manufactured products. □

1 DPD/78—3

Technical Education and Industry

Dr. J. D. Sethi
Member, Planning Commission.

INDIA TAKES legitimate pride in having become the third largest arsenal of technical manpower he present stock of scientific and technological ianpower is more than 2 3 million to which we are dding nearly 85,000 more every year

Behind this "Statistical" pride lies some disturbing acts such as (a) a large part of this technical ianpower is unemployed—about 7 lakhs; (b) many t our sophisticated techhnologists are emigrating to ther countries, largely due to lack of opportunities 1 industry at home; (c) corresponding to other pheres of education there is a high degree of elitism which not only relegates into background the creation of medium and low level skills but also stands in the way of development of a balanced system of technical education, and (d) despite expansion in various directions, there are serious gaps in the system No one can deny the significant contribution of the technical manpower in our economic development but no one can also deny that the rate of expansion of technical education has been faster than the rate of growth in industry or the economy and this process is still continuing; (e) there is no perspective planning of technical education in relation to changing demands of economic development and compulsions of social change.

engineering colleges with an annual admission capacity of 3,000 students for first degree course in engineering and techhnology. The number of polytechnics was only 53 with facilities for annual admission less than 5,000 students for diploma courses mainly in civil, electrical and mechanical engineering. Today, on the other hand, apart from the 5 Indian Institutes of Technology, Indian Institute of Science and other specialised institutions to train high grade technical personnel, there are over 140 engineering colleges (admission capciaty 25,000) and 324 polytechnics (annual admission around 50,000). These offer a variety of courses in as many as fifty different branches of engineering study. Besides these, more than 350 industrial training institutes have been set up with an annual capacity of 1,50,000 for training craftsmen in various trades. An equal number is also under training in the industries under the Apprentices Act, 1961. These have made it possible to provide adequate technical manpower to help develop industries and the supporting infrastructure and thus provide for balanced economic growth.

Some imbalances: Notwithstanding the above progress, there are certain imbalances in the technical education system which need to be recognised. First, our emphasis in technical education so far has been with

> The phase of import substitution is practically over and we are now entering a phase of autonomous development for which a more balanced system of technical education and skills are required.

' cannot be seriously suggested that we should cut on our expenditure on technical education; but we cannot afford to let the present state of affairs continue. We have to reorient the whole technical cation in terms of its founding, organisation, relation with the industry and other developmental activities manner as to optimise the use of this manpower ilarly, though it is very difficult to make a categori- statement about the impact of this technical cation on social change. it seems, nevertheless, that ias created a situation of considerable frustration uncertainity about the future among the educated th. We cannot ignore the simmering revolt of the th against the present system.

First of all, let us have a look at the present status technical education as it has progressed since ependence. In 1947, there were hardly 38

reference to high level manpower, especially engineering and technological graduates and post-graduates and not so much with reference to the middle and junior level categories. To some extent it was an inevitable consequence of import substitution policy which opted for high capital and high skill intensity. The phase of import substitution is practically over and we are now entering a phase of autonomous development for which a more balanced system of technical education and skills are required.

Secondly, our approach to engineering education in the universities has also been influenced by developments abroad, especially the United States, where the need had been to train creative type of engineers, capable of promoting research, development and design. Consequently, the courses were more engineering science-based than practice-oriented for production and manufacturing activities in the industry. Therefore

ed on a talk delivered at the Technical Teachers Training itute, Chandigarh on November 6, 1978.

we have to change radically our approach to technical education towards practice-orientation.

Thirdly, whatever has been done for training the middle level technical manpower, it was patterned after the degree courses so much so that diploma courses in engineering and technology had almost become diluted diversion of the degree courses. No serious attempts were made to relate these courses to the real requirements of employment in industries, public utilities and other engineering-intensive sectors.

Fourthly, programmes of craftsmen training have been organised according to the concept of engineering trades which have general applicability to large scale industries in the organised sector which by themselves have had enough training capability and programmes; as a result, our efforts in craftsmen training have tended to help those sectors which have their own manpower development programmes at the cost of small scale industry and utility sectors which needed special attention to train skilled manpower. There has also been little attempt to establish vertical relationship between the different tiers and levels of technical education, thus leading to an undesirable class structure in the field.

Historically, technical education had to cater few selected employing agencies such as the Works Department, and State Electricity Depar of the Government. The needs of these depart were extremely limited for repair and servici imported equipment and to safeguard Govern property and security. Over the years, however, has been diversification and accelerated develop of the national economy based, by and large, application of science and technology. This ha to an extension and increase in the employment o tunities for engineering personnel far beyond th ditional sectors and functions. This qualitative c in the engineering employment scene has not corresponding effect on the technical education sy In the absence of sectoral balanced requirements taken into account, the expansion in technical e tion has consequently tended to widen the gap bet the technical education system and the world of in industry.

Interaction with industry : One is seriously conce to find that technical education continues to be h subsidised by the Government even though the of its product is employed by private industry, fo

---

No provision exists for a craftsman, with appropriate general education and sufficient practical experience to take up technical education of a higher order which would enable him to assume higher levels of responsibilities in his profession and thus help promote occupational mobility in employment.

This absence of integration has imposed a very rigid system on our technical education. The system provides for a fixed point entry and standardised courses with a rigid structure and predetermined subject contents; a student is left with the option of either to complete the entire five year course of prescribed contents and take a degree or drop out of the system completely without any credit for his performance. Similarly, one has to decide fairly early in career selection either to become (and remain) a technician or to train for an engineer's job and delay entry into the employment market. No provision exists for a crafts man, with appropriate general education and sufficient practical experience to take up technical education of a higher order which would enable him to assume higher levels of responsibilities in his profession and thus help promote occupational mobility in employment.

Finally, technical education planning has emphasised the expansion of facilities and increase in the number of institutions for long-term pre-employment education of future engineering manpower in this process, attempts have not been made by the system to extend its benefits for the spread of technical skills and developments to the economic sectors, much less in rural areas to traditional crafts. In this respect it may be added that neither those who control the technical education nor the users have shown adequate appreciation of the changed plan priorities.

commercially oriented production programmes fact, the private agencies in technical education hav never accepted their role as equal partners and the contribution has considerably diminished in the rece years Indeed the industry almost took it for grante that wha ever their requirements of technical skill woul be met by the public funding of technical education This becomes all the more dangerous for the futur when account is taken of the escalation in cost o maintaining and operating technical institutions The share of the Government in financing technical education has increased almost exponentially during the last 20 years to around Rs 110 crores in 1977-78 and a stage has been reached at which it would not be possible to continue the same rate of growth of expenditure by the Government; it only stands to reason that industries which are the main beneficiaries of the technical education system share the cost of technical education and training.

The absence of interaction between industry and technical education has led to a sort of divorce between them in the field of technological development and thus widened the gap between supply and demand both generally and specially. Rarely do the industries know, much less appreciate, the potential of technical institutions for development work with a view to solving the current practical problems of the industry. Equally and rarely are the technical education institutions aware

he practical problems of engineering faced by indus-i in their day to day operations or in long-term duct/process development. Technical education sys- became more and more education-oriented rather i its making an attempt to operationalise skill im-tation. Even where pilot scale design has been ed and validated by technical institutions, it has not n possible to commercialise it for want of adequate port with suitable industrial establishments. This iotomy has worked in another direction to com-ate the problem further. Even with reference to cation and training one notices a disturbing feature : some industries have organised their own schemes, complete disregard of the educational system, to :t their employment needs ; this reduces job oppor-ities for the product of technical education system ling to increased visible unemployment of technical sonnel.

It is in this context that one has to consider the major linkages to be forged between industry and technical education and identify more specifically the responsibility of industry in technical education. At the outset it is necessary to point out that technical institutions and industries should be, and operate as, joint partners in a common endeavour and have equal responsibility to the rational planning and effective implementation of technical education and training programmes ; this would increase productivity of both, the former by ensuring gainful employment of its product and thus improving the efficiency of its programmes and the latter, by providing manpower trained to meet its specific needs. In this connection the facilities available in technical institution, like a polytechnic, and in industry should be considered as a common resource available to both ; the expertise available in the production system in the industry, especially the human resources, should be available to technical institutions.

One of the major responsibilities in the training of technical manpower which the industry should assume relates to the apprenticeship programme. In the earlier years when the industrial infrastructure had not developed sufficiently there was some justification for organising practical training within an institutional framework. It should be realised that no institutions would ever be able to simulate the dynamic and real production system of a factory. In-industry training is an essential and integral part of education of an engineer, technician or craftsman. It is very disturbing to note that the industry has not yet even fully understood the concept of in-industry training as it is operating in other countries. In fact, there is some suspicion about the institutionally trained people getting in-industry training

Unfortunately, it has been reported that, even after the legislation for compulsory apprenticeship training in industry, the industry's attitude has not been very encouraging. In many cases apprentices are reportedly engaged for the sake of meeting the legal requirements and left to spend the time without any guided training or supervision It is indeed in the interest of industries concerned to take a more serious care of the apprentices and their training; this should be accepted as an essential function of the management and necessary organisational arrangements made for Training Department, training officers and training programmes. There is the obverse side of this problem. The teachers in the technical training institutes take a highly parochial and suspicious view of getting into their institutions highly competent persons from industry for strengthening the operational and practical content of their courses.

Determining the types and the number of technical personnel to be trained is another aspect in which industry and technical institution should interact effectively. This would require detailed manpower planning by industries and their establishments, both on

One of the serious indictments of Indian industry, particularly the large scale industry, has been that it has shown little interest in developing its R & D base.

One of the serious indictments of Indian industry, particularly the large scale industry, has been that it has shown little interest in developing its R&D base. In relation to India's industrial growth, its R&D base remains extremely and poorly developed. Our farm R&D base is far advanced to that of the industry. The industry alone is not to blame for this. The licensing policy of the Government, the kind of collaboration agreements entered into with foreign firms, the structuring of our technical institutions and a certain bias, as hangover of the colonial past, in favour of outside technologists etc. have been responsible for this state of affairs. Without ever being questioned, the industry is spending much less on R&D than it is spending on advertisement or public relations. It was stated earlier that the indiscriminate import substitution policy of the Government, without adequate technological self-reliance built into it, contributed to this state of affairs If appropriate and adequate R&D base had been developed alongwith the massive growth of technical personnel and developmental opportunities, we could now double our rate of industrial growth. But we are stuck at a rather moderate growth rate. It should be very clear to the captains of industry that they themselves would be restricting the scope of development of their industry if they do not expand their R&D activities and integrate it with the inputs that can come from the institutions of technical education.

Everyone realises that large scale industry in the consumer goods sector will not sustain itself without a simultaneous massive development of small scale sector as a proper ancillary system to the large scale sector The linkage between the large scale and the ancillary sectors cannot be adequately built up without a technological link between the two, in addition to marketing and credit facilities also being provided. It is high time that the industry paid some attention to this problem, both in the preparation of their plan for further development and for its fitting into the overall national priorities.

short-term and long-term basis. The industry has thereby to ensure the availability of the right number of manpower of proper quality and thereby minimise its own investment in the in-industry efforts; on the other hand the technical institutions should ensure that training does not become an end by itself but leads to gainful employment of the trainee in accordance with the level and nature of training imparted. With renewed emphasis by the Government on employment objective of development plan and the adoption of area development plan as a decentralised approach to achieve this objective, as well as in keeping with the welcome trend of major industrial establishments participating in rural development projects and programmes, this initiative should be taken at the area level and by not only the organised industrial sector but also small and rural industry projects

The advantages of organising technical education on a sandwich basis are too obvious to be overstressed It provides for systematic and frequent communication and consultation with the technical institutions and industry and thus ensure the imparting of skill, knowledge and attitudes which are essential on the job It also provides for a frequent reappraisal of what is required for good performance on the job and continued learning on the job. Sandwich courses, both institution-based and industry-based, should become the normal pattern of technical education . the contents, duration, methods of instruction, entry requirements as well as the means and nature evaluation of achievement should be jointly determined by industry and teachers at the institution level to replace the present approach based on educators' ideas of what is required to maintain standards and the consequent predetermined framework of courses

the practical reality and manifestation of various kind of industrial problems or with the recent technica innovations in the field. Bookish knowledge abou production systems, materials, processes and instru ments would nearly always related to ideal condition of operations without sufficient account being take of practical feasibility and/or economics or social en vironment of production at the micro-level. Trainin given under these circumstnces leads to a misfit c technical manpower in real work situations. This ca be remedies partly through arrangements by industi by which some of their experienced line personn take part-time classes in technical institutions or teach ers from technical institutions are taken in to tak up investigation and related work of interest to th industry, on sabbatical leave or during vacations

Ways and means have to be found to provide fc adequate financing of technical education programm jointly by industries, technical institutions and th Government. Suggestions have been made from tim to time for a levy of cess on industry to be ploughe back to them on the basis of their training and researc efforts. The Industrial Training Act, 1964 of the U.K or the recent enactment in West Germany need to b studied carefully alongwith our own experience wi the implementation of Apprentices Act, 1961 so th workable measures are adopted. A trend has alread been set by progressive industrial establishments spo soring and financing specific research projects at th Indian Institutes of Technology and other selected inst tutions according to time-bound and goal-oriented pr grammes. Industry could consider adoption of existin polytechnics for training its manpower specifically r lating to the job specifications of its establishments.

The teachers in the technical training institutes take a highly parochial and suspicious view of getting into their institutions highly competent persons from industry for strengthening the operational and practical content of their course.

It is also to be recognised that the industrial scene in India is getting more diversified as well as sophisticated with increasing content of science and technology. Such sophisticated industrial structure would call for corresponding sophisticated manpower inputs which only industry can develop properly and effectively. In a number of cases, the need might be to set up specialised facilities, and even institutes, to serve the specific needs of an industry and its establishments, e g., printing. It would be extremely difficult for an educational institution, with its administrative, managerial and financial constraints, to recruit suitable teachers and to organise the necessary facilities on its own. It would be appropriate in these cases for the concerned industry, preferably as a group, to sponsor the setting up of specialised facilities and participate in its management along with the educational authorities and the Government.

Even with reference to the general areas of engineering education, it is essential that instructors in technical institutions are sufficiently familiar with

could also avail of the facilities for nonformal cours and continuing education as part of career developme plan for its employees.

The industrial scene in India is getting mor diversified as well as sophisticated wit increasing content of science and technolog

Finally, it is high time that we must review the whol situation in the context of our perspective plannin for technical education and a dialogue be starte between the industry, Government and the pla ning Commission to find answer to the questions whic were raised earlier. The Planning Commission woul be ready to take initiative if there is an adequat response from the industry and an assurance that the do realise their social and financial responsibility bot in the field of industry in general and technical educa tion in particular. □

New Economic Policy for Generation of Job Opportunities



Prof. Kalipada Basu
Free Lance Journalist

Unemployment is one of the causes for poverty. Realising the gravity of the problem, the present Decentralised Planning adopts labour-intensive techniques in the process of economic progress....Agriculture, small scale industries and cottage industries are being given top priority. During the Sixth Plan Period about 50 million people will have job opportunities

ALMOST ALL WILL agree that unemployment is, at present, the biggest social and economic problem of our country, which has worsened with the rapid growth of population. The main causes of extreme poverty in our country are unemployment and under-employment and they create numerous social problems

The Unemployment Problem

In the earlier Five Year Plans no specific programmes were taken up to solve the problem of unemployment. Our planners and some of our economists believed in the theoretical concept that economic development and higher growth rate will automatically create employment opportunities Hence in our past plans attempts were made to increase growth rate by giving emphasis on capital-intensive on large scale industries. But the question is, why even after 28 years of planned economic development the unemployment problem has not been solved? The registered unemployed in our country were 5.1 million in 1971-72, which went up to 11 million by March, 1978 About 50 per cent of the registered unemployed persons are educated to the level of matriculation or above None can deny the fact that National Income of India had increased manifold during the last 30 years, but employment opportunities were not generated in the same proportion. Why had it been so? It is not very difficult to find out the answer.

In India, about 80 per cent of the total population and about 70 per cent of the total labour force live in the rural areas. In our country, capital is scarce and labour abundant. In such a situation, it is inadvisable to launch capital-intensive projects Our past Industrial Policies were responsible to a great extent for the "increasing misery" of the vast unemployed people. The International Labour Organisation's (ILO) sources reveal that during last five years the production in UK increased by 2 per cent on an average, but employment scope decreased by 5 per cent. During the same period production in Japan rose to 127 per cent as against 14 per cent increase in employment opportunities. In the U.S.A the percentages were 46 and 19 respectively. It has also been found that in India during the last five years the production or GNP increased by 15 per cent, but employment opportunities rose by 19 per cent only.

Registered Unemployed

The gravity of the situation can well be understood if we look at the recent figures of unemployments in our country The registered unemployments do not show the real picture Different statistical organisations, committees, commissions etc. have revealed different statistical data regarding unemployment in our country. According to one such body the present number of unemployments in our country is about 25 million—it is about 12 per cent of the total labour force of our country The percentage of unemployment to total labour force is much higher in our country as compared to that of other countries For instance, in USA unemployment to total labour force is 5 2 per cent, in U K. 3.3 per cent and in Japan it is 1 3 per cent only.

In our past planning some targets for employment ere fixed, but in no plan these were ful-filled, and the beginning of every plan there was huge ıck-log of unemployment. In the fourth plan, about) million job opportunities were created, but inspite : that at the beginning of the Fifth Plan the back-'g was 30.1 million. The main defect of the Fifth an was the silence of our planners on the burning sue of unemployment.

Decentralised New Economic Policy

The present Government after coming to power announced that they would provide employment to all able-bodied persons within ten years. The Government realised the drawbacks of our past economic policies. They, therefore, announced a new Economic Policy. Decentralised Planning, in the Gandhian line, is the key-note of the Economic policy of the new Government. Henceforth, the Government would adopt labour-intensive techniques in the process of economic development of the country From now, top priority would be given on agriculture and allied subjects, as well as on small scale and cottage industries.

The Union Government has decided to start 'Perspective Plan' and 'rolling annual plans'. They have terminated the Fifth Plan one year before its completion, and have prepared the draft outline of the Sixth Plan (1978-83) only to give practical shape of their new economic concepts. The planners have reserved 43 per cent of the total outlay of the Sixth Plan for agriculture and rural development and they assume that during the period of the Sixth Plan about 30 million new job seekers would be added to the existing number of unemployed persons ; but in the Sixth Plan period 49.27 million people will have job opportunities. The break-up are : (a) 20.3 million in agriculture and allied subjects, (b) 9 million in small scale and cottage industries, (c) 18 million in other sectors. The major field of activities are : irrigation, electricity generation, road construction, house building, establishment of schools, opening of health centres, extension of forestry, supply of drinking water, extension of milk projects and many others.

It is good that for the first time since independence our government has realised the truth that decentralised planning with rural bias only can eradicate poverty and raise the living standard of our people.

Revitalisation of Employment Exchanges

The Employment Exchanges in many countries play a vital role in the field of employment. But in our country, Employment Exchanges are said to be dormant There is a common belief that our Employment Exchanges are unable to do anything for the unemployed youths The mode of functioning of our Employment Exchanges are not in conformity with the expectations of the job seekers. Therefore, the mode of operation of our Employment Exchanges should have to be reformed in such a way, so that, they can help the job seekers in a big way

It is, of course, heartening to note that the Union Government has set up a committee under the Chairmanship of Shri P. C. Mathew, to undertake a comprehensive review of the working of National Employment Services and to make recommendations for their improvement.

The employers allege that our Employment Exchanges are unable to sponsor qualified candidates. The allegation is not without foundation. The fact is that more than 60 of the total number of unemployeds in our country have not registered their names in Employment Exchanges. The registration of names cannot be made compulsory at this stage as there are only 600 Employment Exchanges in the country. These Employment Exchanges cannot cope with the number of unemployed people in the country. Therefore, the question of compulsory registration would definitely have to be considered as and when the exchanges are revitalised.

Role of Employment Exchange

The first task of the Employment Exchanges would be to keep an account of the man-power of the country. The whole working force should be divided into several categories in accordance with training, skills etc Employment Exchanges should attend every house and take note of the nature of employment of the members of the house. The unskilled persons should be trained keeping in view the nature and trends of demand in the labour market which can be initiated by employment exchanges. The Employment Exchanges should also publicise the vacancies for which they have been asked to send names, so that, the persons who are fit for the posts advertised can registered their names in the Employment Exchange. New Exchanges should be opened in rural areas to cater to the growing needs.

There is no scope of any complacency for the Government's new endeavour to cope with the unemployment problem. We should see how far the Government's policy is implemented or materialised. Our past experience has disappointed us and a pessimistic outlook is prevailing in the employment world. Our Government has definitely a good intention to solve the social evil of unemployment but the main point is whether the programmes will remain as "paper programme" or will take a real shape. □

A Successful Cooperative

KHANPUR MEWAN milk producers cooperative has proved to be one of the most successful milk cooperative society operating in Alwar district. The society earned a net profit of Rs. 17,152.06 during the year 1976-77 which was recently distributed among its memebis.

The society was registered in February, 1974 with only 21 members. It has steadily progressed during the last three years and now consist of 85 members. Village Khanpur Mewan has a population of about three thousand and its cattle wealth includes 450 buffalows and 275 cows.

Work of the society is not restricted to the selling of milk but it also arranges for balanced cattle feed and fodder, certified fodder seeds and veterinary facilities. Society also participates actively in other welfare activities concernig the village.

F.P.O. Alwar

Education in Kerala

Rosscote Krishna Pillai
Sr. correspondent "Yojana" Trivandrum

KERALA's place has been deeply etched in the educational map of India. Its progress in the field of education has been consistently rapid and remarkable. Public expenditure on education which was Rs. 16.16 crore in 1960-61 increased ninefold to Rs. 143.79 crore in 1976-77, which is about 38 per cent of the State budget The proportion of public expenditure on education to the State income is 6.5 per cent as against 3 per cent for India as whole. Kerala had achieved one and a half decades back the present all-India proportion of 3 per cent. Teaching is perhaps the most important avenue of employment for the educated in the State During 1976-77 there were 1.64 lakh teachers in schools and 48 per cent of them were women. School education up to S.S.L.C. has been free since the Fourth Plan period

In the number of educational institutions in relation to population, in the percentage of enrolment of children of various age groups in schools, in women education and in the spread of literacy, Kerala is several steps ahead of other States in the country It has been so even before Independence, in the former Travancore and Cochin areas of Kerala due to consistently enlightend policies pursued by the then administrations under the erstwhile Maharajas of the two native States in encouraging the educational efforts of Christian missionaries and social organisations of other communities The Malabar area which formed part of the then Madras Presidency suffered in the field of education due to neglect and lack of similar efforts by the British Indian Government but it is fast catching up with the other regions in the State. Owing to deliberate and determined steps taken by the successive Governments of Kerala. The State Government has been making all-out attempts to tackle the problems of comparative educational backwardness of the Malabar region and remove the disparity between the three major regions of the State

During the present academic year, over 7.5 lakh Five year old children entered the portals of education in Kerala, thus bringing the total number of school children in the State to about 56 lakhs. Out of these 26.75 lakh are in the lower primary classes, 18 lakh in upper primary classes and about 11 lakh in high school classes. Last year about three lakh students have completed their high schood education, out of whom about 1.5 have passed in the S.S.L.C. examination.

There has been a steady growth of educational institutions over the year. Now there are over 11,400 schools in the State out of which 7,013 are lower primary schools, 2,725 upper primary schools and 1,680 high schools. In certain schools which have had a consistently good record in examination results, admission for a child of average abilities has become almost an impossibility. Whereas there are some schools specially in the rural areas which keep their doors wide open but fail to get enough children to fill their seats.

As a result of Christian missionaries and other private agencies taking the lead all these years, in opening schools in the State, the bulk of the schools are in the private sector. About 62 per cent of the schools and 81 per cent of the colleges are run by private agencies which include social organisations and individuals. However school education is fully subsidised by the State The entire burden of maintaining the schools and colleges is borne by the Government. In fact because of the liberal education policy which involves direct payment of the entire recurring expenditure of the aided schools and colleges including teacher's salaries by the State Government, education has become a major drain on its resources. Perhaps Kerala is the only State in the country which finance the entire recurring expenditure of private educational institutions

The expenditure on school education went up from Rs 105.69 crore in 1975-76 to Rs. 118.21 crore in 1976-77 and on University education increased from Rs. 15.69 crores to 17.25 crore. The share of the technical education also rose from Rs. 4.5 crore to Rs. 5.15 crore The per capita Government expenditure on education went up from Rs 55 in 1975-76 to Rs 60 in 1976-77. The cost per pupil also showed an upward trend during the period from Rs. 170 to Rs. 186 in primary education and Rs. 361 to 371 in Secondary education

There has also been a steady growth of educational institutions The total number of lower primary schools increased from 6992 to 7013, upper primary schools from 2718 to 2725 and of high schools from 1666 to 1680 The increase in enrolment in the schools has also been remarkable. From 53.54 lakh in 1976-77 it went up to 54.95 lakh in 1977-78. The increase was higher in the secondary stage than in the lower primary or high school stage. The annual intake in class one

of the primary schools was gradually declining from 1972-73 but in the last two years the position has changed; the enrolment has since been going up.

In the two decades between 1956-57 and 1977-78 the total enrolment in the primary stage almost doubled and in the secondary stage increased four-fold. This is taken as an indication of the enrolment at the primary stage having reached the saturation point quite early in the sixties while facilities and demand for secondary education were continuing to expand.

It is estimated by the educational authorities that Kerala has almost secured 100 per cent in the matter of enrolment of children in the age group of 6 to 11 However educational facilities at the primary level have to be gradually expanded "so as to achieve and maintain free and universal primary education even with the increasing population."

It is interesting to note that the development of higher education in the State has far outstripped the development of secondary and primary education There are 130 Arts and Science Colleges in the State of which 107 are in the private sector. There are four Universities including the Agricultural University at Mannuthy near Trichur. The University of Kerala with its headquarters in Trivandrum has 79 Arts and Science colleges affiliated to it. The University of Calicut has 51 Arts and Science college whereas Cochin University being non-affiliating University, has no affiliated or constituent colleges except one Engineering College.

Of the 130, 31 are junior colleges offering only pre-degree courses. Some of them have recently been up-graded As in the case of school education University education too is mostly in the hands of private agencies which include Christian missionaries and communal social service organisations like the Nair Service Society, the S.N.D P Yogam and the Muslim Educational Society which are also the dominant organisations in school management

The unprecedented expansion of higher education has led to a lopsided growth of education facilities and to an increased quantum of educated unemployment in the State. The emphasis in recent Plans has been to arrest any further quantitative growth in higher education except when required for the removal of regional disparities and to improve the quality and standard of education. A series of measures like teacher education, improvement of facilities in the existing institutions, promotion of research activities and strengthening of the administration are proposed to be taken in this regard

There has been rapid increase in the number of students receiving higher education and is evident from the increase in the enrolment in the colleges. From 0 36 lakh in 1960-61 the enrolment went up to 1.76 lakh in 1976-77. Out of the total number of enrolment in the colleges, pre-degree courses account for 60.2 per cent, first degree 36 4 per cent and post graduate 3 4 per cent

Professional and Technical Education

Prior to independence and the launching of planned development, Kerala had not taken long strides either in technical or in professional education. The areas comprising the State had only two engineering colleges or two or three polytechnics. Not even a single medical college was there. After Independence and especially in the last two decades an impressive growth in technical education has taken place. Now six Engineering colleges, 18 polytechnics, 21 Junior Technical Schools and 41 Industrial Training Institutes besides a number of Industrial Schools and other institutions turn out a large number of engineers, technicians and craftsmen. The four medical colleges also produce every year considerable number of medical graduates. The annual turn out of technically qualified persons in the State has been so tremendous that it has created a spectre of unemployment among them. The State, which has lagged behind in industrial development, has been unable to absorb the technically-trained personnel. Therefore they are leaving the state to metropolitan cities and industrial towns in other parts of India as well as the Gulf countries, the United States and Canada.

The State has 19 Teacher Training Colleges out of which 15 are in the private sector. There are four Ayurvedic Colleges and four Law Colleges.

The State has made spectacular strides in Girl's education Girls constitute 48 per cent of the total student population in schools and 47 per cent in colleges, which shows that girls almost equal boys in number in schools and colleges.

Although Kerala could boast of the higher percentage of literacy among different States, the sad fact remains that almost 49 per cent of the State's population still submerge in the ocean of literacy. The Government of Kerala has recently formulated a scheme for starting 10,000 non-formal education centres in the State spread over its 976 panchayats to impart education and knowledge to over 90 lakh illiterates in the State. It is expected that through this programme illiteracy could be wiped out from the State in the next five years. In this field a number of voluntary social service organisations like the Kerala Association for non formal education and development (KANFED) have, of late, come forward to lend support to the Government move and start non-formal education centres under their auspices. KANFED is a pioneer-organisation in the State with considerable expertise initiative and experience in the field. It has in the course of the last one year trained over 800 education instructors in the non formal techniques and has brought out over 40 books on different subjects for neo-literates.

While it is acknowledged on all hands that Kerala has won it's spurs in quantitative educational development, educational planners and administrators find that the vast expansion of educational facilities has led to a general fall in the standard of education and also to a certain degree of wastage and stagnation at various stages of the educational system. It is therefore decided that further quantitative expansion should be confined to exceptionally backward areas and backward sections of the community. Stress will be held on a qualitative improvement of education and effecting structural change at various levels of education. A series of measures like the revision of curriculum, specially in science and mathematics, production of quality text books, reforms in examination techniques and teacher education have been taken up in order to improve the content and quality of education.

Increasing attention is being given to the improvement of physical education facilities in schoools. A Sports School was set up in Trivandrum with a view to giving education to gifted sportsmen and atheletes among school children in an atmosphere conducive of their all-round development. Due emphasis is also being laid on the introduction of work experience programmes at primary and post-primary stages. □

Hubli Industrial Estate

—a survey

R. V. Vadibhavi

Lecturer in Economics, S. K. Arts College and H.S.K. Science Institute, Hubli

AN ECONOMIC survey of the Industrial Estate at Hubli was conducted by the Planning Forum of Shri Kadasiddheshwar Arts College and H. S. K. Science Institute, Hubli, in Feb., 78. The estate at Hubli was established in an area of about 30 hectares in 1959 At present the Estate area is surrounded by a complex of large number of industries both small and big. With the march of time, the number of sheds of varying sizes constructed in the Industrial Estate has increased. 139 Sheds of B.C D. types were built by the Karnataka State Industrial Development Corporation (KSIDC), Bangalore. The sheds constructed by KSIDC were given on a reasonable rent to entrepreneurs to start their industries. The Estate has one State Bank of India branch, a Post and Telegraph Office, a canteen, a library and an administrative office of KSIDC. All the sheds are provided with water and electricity. Very recently tar roads are laid in the area. A voluntary 'Small Scale Industrialists Association' formed by the Industrialists also functioning in the Estate.

Method of Survey

A random sample of 48 Industries, comprising those functioning in B, C, D, mini, Spl, and N etc, type sheds, was taken. A large number of students who were given preliminary lectures and training of field survey techniques participated.

Background of Industries

From the information supplied by industrialists, it was found that there was not much of a time gap between proposals made for starting the industries and their actual functioning. For example 50 per cent of firms had a gap of less than one year and only few firms had a gap of more than two years. It was noticed that nearly 70 per cent industrialists belonged to Dharwar district and few of them are from the neighbouring states. And more interestingly it was found that 70 per cent of them come from either business houses or industrial families. Only 12 per cent belonged to agricultural families. This shows that running an industry has become almost a hereditary affair. When asked about their educational background and the type of training they received, it was revealed that 50 per cent of them received the technical education viz., B. E., A. M. I. E., D. M. E., etc., 26 per cent of them were graduates in Arts, Commerce and Science and 12 per cent studied upto S. S. L. C. Only 50 per cent of the entrepreneurs received the training after their education and 90 per cent of graduates in Arts, Commerce and Science received no training at all, and under 'Half-a-Million Employment Scheme' launched by the government, they felt compelled to start their own units. Hardly 8 per cent of industrialists, that too technical graduates were trained in foreign countries

Industry Group

The industries which are flourishing in the estate fall into broad categories such as food products, wood products, paper products, plastic products, chemicals, grass, basic mated industries, metal products, machinery and parts, electric and electrical products, transport equipments, repairing, servicing and job work. However, the industries falling in the group job works, repairing, machinery and parts, metal are predominant

Investment Profit-Interest

All the industries of the estate belong to small-scale group These industries broadly fall into three groups Half of the Industries have Rs. 1 lakh invested capital out of which 73 per cent is borrowed. (2) About 30 per cent of the industries invested between Rs. 1 lakh and Rs. 3 lakh. Half of the capital is borrowed and (3) those investing beyond Rs. 3 lakh are one fifth of the total They borrowed 66 per cent of the capital. Rates of profit of these three groups are 14.5 per cent, 15 per cent and 13 per cent of the capital, respectively. It is evident that small industries have been started by people of limited resources and hence they depend largely on borrowed capital. But the share of borrowed capital in industries of Rs. 1 lakh to Rs. 3 lakh capital is less than that of the borrowed capital in the other two groups. Further an interesting outcome of the survey was that, it was the 2nd group of industries which have earned highest rate of profit. This may be

due to higher technical education of the industrialists. Further they have employed skilled man-power like I. I. T. trained. Moreover, their borrowed capital is comparatively less. As the industry grows in size and stature with the application of more borrowed capital, the rate of profit is likely to go down as is evident from the above. From the economic point of view, it is necessary to encourage group two industries and more so with a view to encouraging the technically qualified unemployed graduates to take up self-employment in such industrial estates The rate of interest on borrowed capital varied from 9 to 18 per cent. However, it was found that 60 per cent of industrialists borrowed at the rate of 12 to 14 per cent. They were financed mainly by commercial banks, Industrial banks and their friends and relatives. Most of them expressed that they could not get the loan when required. The government helped the industrialists by way of providing interest subsidy octroi concession, tax relief and so on. It was found that 45 per cent industries are in receipt of one or the other kind of help

The survey was directed to the study of workers and their welfare programmes also. Nearly 65 per cent of industries employed less than 10 workers and one fifth of them employed more than 30 workers Further, it was also noticed that of the total workers in each industry, nearly 35 to 40 per cent workers are employed on temporary basis. So far as their education and training was concerned, only 40 per cent of them received education upto S. S L C. and industrial training. Wages paid to the workers differed from industry to industry and worker to worker depending upon their capacity and educational status. Broadly speaking, one fifth of total workers in the estate are receiving wages between Rs. 100 to Rs. 200 and 50 per cent workers between Rs 201 and Rs 300 p m Only one fourth of the total workers are paid more than Rs 301 p.m. Workers expressed their inability to maintain their families with this wage structure. Almost all the industries allow some paid public holidays. They have to work for about eight hours a day and in shift system in some industries They enjoy some medical facilities also 85 Per cent of the firms have extended medical benefit to the workers in case of accidents when they are on duty. Under this scheme the workers received financial help to meet their medical expenses. About 15 per cent of industries pay bonus to employees, while 8 per cent supply free uniform Some workers get refreshments at subsidised rates Unfortunately there are no recreational facilities for the worker in the Estate A strange finding of the survey is that, the workers neither have formed their association nor joined any union. As a result the estate has been free from industrial unrest such as strikes, bundhs, hartals and lock-outs. However, the workers have felt the need to have their association to safe-guard their interest.

Raw materials and marketing of products

Most of the industries require non-agricultural based raw material. The raw material of required quality and quantity is available in the local and neighbouring markets. These small scale entrepreneurs are not able to reduce the cost of production on account of the upward trend in the price of the raw material.

Some items produced in the estate are sold in the local and other markets. It was also found that as a result of steep fall in the demand for some products owing to disturbances in major industries, nearly 25 per cent of industries were affected during the previous years So far as repairing, job works-industries are concerned, they heavily depend upon local industries for their work Finding a regular and good market itself is a big problem for majority of the industries and more so, in case of small ones.

On the specific enquiries regarding their suggestions for their betterment and for the over-all improvement of Industrial Estate, only 60 per cent of them were able to give some suggestions They felt that better infrastructure facilities should be provided in the form of increased electricity supply, establishment of financial institutions, and training facilities for the workers in the Industrial Estate itself. Government should come to their rescue to supply raw material at low price They wished that their small-scale Unit Association must be given due recognition by the government. There is a proposal to publish a periodical containing the information about various products of the industrial estate, prices and requirements of raw materials. This, to a certain extent may solve their marketing problem.

Conclusions

On the basis of these findings, it is inferred that these small scale industries, if located at Taluka level, would more effectively solve the regional and seasonal unemployment problems Further, they help correct regional imbalances It is necessary to advance loans only to entrepreneurs having some technical or industrial educational background. The success of such enterprising ventures depends on the quality of the workers. □

Increase in State Income

The State income of Maharashtra at constant prices (1960-61) for 1976-77 registered an increase of 5.5 per cent over that for 1975-76 and is expected to increase by about the same order in 1977-78 At current prices it was Rs. 83 95 crore in 1976-77 and Rs 76 04 crore in 1975-76. The per capita income at current prices in 1976-77 and 1975-76 was Rs 1,489 and Rs 1,376 respectively. Though the agricultural production increased by about three per cent to reach a new peak. The agricultural season in 1977-78, too was not satisfactory, particularly in pockets in drought-prone areas affecting adversely the local varieties of kharif crop. Yet it is expected that the State will exceed the production level of 1976-77. The foodgrains production in 1977-78 is expected to be 1 05 lakh tonnes.

In 1976-77, the public sector employment increased by about five per cent to 18 4 lakh while that in the private sector remained practically static The average daily employment in the factory sector was more or less of the same. Guarantee Scheme work for 13.32 crore mandays was provided in 1976-77 as compared with 10 95 crore mandays in the previous year. In 1977-78 work for 9.96 crore mandays was provided between April 1977 and January 1978, involving an outlay of Rs. 3464 crore. □

Focus on State Financial Corporations

Jawahar Lal
Lecturer, Raj Rishi College, Alwar

THE GOVERNMENT of India passed the State Financial Corporations Act on September 28, 1951 empowering the State Governments to establish financial Corporations for their respective regions. Accordingly all the states except J&K have set up such corporations with the object of helping small, medium and cottage industries. At present 18 SFCs (including the Tamilnadu Industrial and Investment Corporation) are functioning in different states in India. The Financial Corporations are authorised to provide financial assistance such as, granting loans or advances or subscribing to debentures of industrial concerns, guaranteeing loans raised by industrial units on such terms and conditions as may be mutually agreed upon and underwriting the stocks, shares, bonds and debentures. Loans and advances granted or guaranteed by corporations should be sufficiently secured by a pledge, mortgage, hypothecation or assignment of Government or other securities, stocks, shares or secured debentures, bullion movable or immovable property or other tangible assets.

During the 25 years period (1952--1977) of their existence the performance of the SFCs is quite creditable.

Sanctions and Disbursements

The 18 SFCs, sanctioned and disbursed, financial assistance of about Rs. 168.3 crore and Rs. 105.3 crore respectively during 1976-77. The aggregate financial assistance sanctioned and disbursed by the SFCs from their inception upto the end of March 1977, amounted to Rs. 927.7 crore and Rs. 602.7 crore respectively and the assistance outstanding at end—March 1977 was Rs. 445 5 crore. Almost the entire assistance extended by the SFCs was in the form of loans. The assistance extended by way of underwriting and direct subscriptions was only nominal The table below shows the SFCs total sanctions and disbursements since the inception and upto the March, 1977 :—

SFCs are giving assistance to small scale units in India. It is noteworthy that the share of the assistance benefitting the small-scale units was as high as 67 per cent. Assistance sanctioned to small-scale units increased from Rs. 98.5 crore in 1975-76 to Rs. 112.7 crore in 1976-77. The number of units assisted also recorded an increase of 5.8 per cent. The number of small-scale units assisted (7740 units) during 1976-77 formed 95 per cent of the total units assisted as compared to 94 per cent during 1975-76.

SFCs and backward areas

SFCs are taking keen interest for the development of the backward areas. Loan assistance aggregating Rs. 88.1 crore was sanctioned in respect of 4098 units located in the specified backward areas during 1976-77, compared to Rs. 74.7 crore extended to 3935 units in 1975-76 The share of assistance to units in the backward areas has increased from 45.8 per cent in 1975-76 to 52 4 per cent in 1976-77 The proportion of assisted units located in backward areas to total assisted units remained around 50 per cent. Except SFCs in Orissa, Haryana, Maharashtra, Kerala, Punjab and Karnataka, others sanctioned more than 50 per cent of their assistance to units in backward areas.

Judging the performances of SFCs in their developmental role, there is need to pay more attention particularly to the development of backward areas and small scale sector. The Corporations should play a complementary role to banks rather than compete with them. A disconcerting feature affecting the corporations is the marked increase in the number of debts for which suits had to be filed for recovery of dues. The high percentage of over dues shows that the performance of some corprations is far below the average. SFCs should like the commercial banks, adopt a number of specific measures to increase their volume of assistance to small scale units and backward areas. These would include fixing up of certain targets to be achieved for the setting up of separate cells to look after the needs of small-scale units and appointing of specialised staff trained in development banking for these purposes. They should adopt selected districts for intensive operational special schemes of assistance to particular class of entrepreneurs and take up surveys to identifiy industrial potential. The SFCs have a significant role to play in the promotion of medium and small scale industries in India □

Rs. in crore

Year (April-March)	Sanctions	Disbursals
1952-70	159.2	145.3
1970-71	49.6	33.5
1971-72	64 1	39 6
1972-73	78.7	44.7
1973-74	103.1	54.6
1974-75	141.8	79.6
1975-76	162.9	100.1
1976-77	168.3	105 3
Total	927 7	602 7

Planning for the 1981

Census of India

P. Padmanabha
Registrar General and
Census Commissioner—India

The Census is not a mere head count. No doubt that is an essential purpose, but equally important is the collection of vast amount of information on certain basic characteristics of the people. This is what makes the census important—the fact that census data lends itself to a variety of use It would well neigh be impossible to formulate plans for economic and social development without recourse to census data.

INDIA is among the few countries that have an unbroken series of censuses over many years. Commenceing from the Census of 1881, we have had a population census every 10 years and even during the Second World War., the 1941 Census was conducted. We have a rich census heritage. The next census is due in 1981. The organisation for the 1981 census is underway and the preliminary steps have already been taken.

The census of India is the most important single source of information about tht people. Census data are valuable because of certain unique features—the completeness of coverage, availability of data at various points of time, possiblities of analysis of inter-related characteristics, availability of data for small areas and at the village level and comparability of the data among the States in the country.

Over the years, the census has come to be recognised as essential for providing bench-mark data. Given this importance of the census, the need for careful planning of the organisation of the census operations scarcely requires any emphasis. The census of India is one of the largest administrative operations in the world and involves both central and state government hierarchies and depends on the total cooperation of the citizens in the country.

The planning of the 1981 census has already begun. The first major step has been the convening of the First Data Users' Conference in February last year at New Delhi. Almost all categories of census data users were represented at this conference, including Ministries of the Central Government, representatives of the State Governments, the Planning Commission, Universities, Research bodies and others. In fact, even before this Conference, various expert working groups had gone into specific concepts and issues and formulated certain recommendations. Based on this collective thinking, the draft questionnaires have been prepared and are being tested in the field.

A pilot study was conducted in June this year in some parts of the country and right now the First pretest is on in selected districts in all the states and union territories, except Lakshadweep, Mizoram, Pondicherry and Dadra and Nagar Haveli. By the end of October, this pretest will be completed. The results of the Pilot Study and the pretest will be analysed and an evaluation will be made of the suitability of the questionaires, the clarity of the concepts and the instructions to the census personnel and any operational and field difficulties will be identified. This analysis and evaluation will be placed before experts and selected users at a second Data users Conference later this year. There after, the questionnaires will be finalised and a Second Pretest will then be held all over the country. This second pretest is scheduled for February-March next year.

Meanwhile, the census organisation is being built up. In every State and Union Territory the census direc-

torates are being expanded and the State hierarchies are being involved in the field tests. The appropriate authorities at the district and taluk or police station or block level are also proposed to be established. The vast army of the field personnel, mainly the enumerators and supervisors, will be drawn from the State hierarchies.

At the 1981 Census the basic forms that will be canvassed are the Houselist, the Household Establishment Schedule, the Individual Slip and the Population Record.

Each of these forms has a specific purpose and utility. Through the Houselist it is proposed to collect some basic information on housing and housing conditions in the country. Details are proposed to be collected on the purpose for which the house is used that is whether as residence or for on establishment, whether there are facilities such as drinking water and electricity and, in urban areas, whether there are toilet facilities, the number of persons normally living in the house, whether the household cultivates land and whether there are any handicapped persons in the house.

In the Household Establishment schedule, it is proposed to collect information on household industry and trade.

The Individual Slip is the most important of the census schedules. The Chief demographic, social coltural and economic characteristrics of every individual will be collected in this form. One such slip will be completed for each person. The charateristics on which information will be collected include sex, age, mother-tongue religion, whether scheduled caste or scheduled tribe, marital status, nationality, literacy, educational attainment and economic activity. The name of the persons and his or her relationship to the head of the household will also be recorded

The econmic Questions are of great importance. The design of these questions has been a matter of considerable concern because the information on the economic characterisation is of vital interests.

The economic questions are of great importance. The design of these questions has been a matter of considerable concern because the information on the economic characteristics is of vital interests. The economic questions are designed to elicit information of the economic activities of all persons and also about secondary and marginal work. In fact, one of the main objectives of the pilot study and the pretests is to test these questions and to assess whether they yield reliable results. It is also proposed to include a question whether one is seeking work in the case of those that are non-workers. The canvassing of the economic questions is of special concern since the data is basic for man power planning, formulation of employment policies and for analysing changes in the composition of the labour force.

It is proposed to canvass certain other questions in sample areas. In fact, for the first time resort is being made to sampling in the census. These questions relate to other languages known, birth place, place of last residence, duration of stay at the place of enumeration, and certain questions relating to fertility in the case of *ever-married* women. In the case of *ever-married women* it is intended to find out the age at marriage, the number of children born and the number living. Also, in the case of currently married women whether a child was born during the last one year and if so whether the birth has been registered.

The Population Record is a document that incorporates basic information regarding every household in the country. This will be valuable for certain household tabulations and as a frame for further surveys.

The Population Record is a document that incorporates basic information regarding every household in the country. This will be valuable for certain household tabulation and as a frame for further surveys

The tabulation procedures and the systems for early dissemination of the results and the retention of the data in a manner capable of retrieval and further analysis have also been under active consideration. The census, like most data collection, is fairly expensive exercise and the effort and cost of such a vast operation would be justified only if the final results are available as early as possible and the data so preserved as to enable those that want it to get it easily and in a convenient form. To ensure early availability of basic, data, it is proposed to adopt manual tabulation as before, but the possibility of tabulation through direct data entry systems and computerisation on a larger scale are also being considered. We hope that within four years after the count, the tabulations will be over completely.

No doubt the organisation of the census operations is a tremendous task but the success of the census almost entirely depends of the enthusiastic involvement of the inumerable officials drafted for the work and the willing cooperation of the citizens of the country. India has had a long census tradition and the purpose of the census is now well understood. The census is carried out under the Census Act of 1948 which makes it obligatory for the public to answer all census questions correctly and fully. But more important

the Act protects the public from use of this information for any other purpose. It guarantees confidentiality of the information and non-identification of the individual. The information on the individual slip or in any other census form cannot be produced as evidence in any court of law, except for an offence under the Census Act itself. It can only be used for statistical purposes. Actually, the tabulation is in aggregates and the identity of the individual is totally masked. Therefore there need be no reluctance in answering census questions.

The census of 1981 will, in effect, begin in 1980. Towards the middle of 1980, the House listing operations will begin and be completed within a few weeks. Every single house or habitation will be listed and certain essential details collected. This involves complete mapping of all small areas, the identification of all places where people live and their listing. The Houselisting operations give us valuable data on housing and housing conditions in the country and on housing stock. It also provides us the essential frame for the population count itself.

The actual enumeration of the population will commence towards the middle of February 1981 and go on till February 28, 1981. During this period, the enumerators will visit each household and canvass the individual slip for each person. The enumeration will end with the counting of the houseless on the night of February 28, 1981 and then there will be a quick revisional round between March 1 and March 3, 1981. This would complete the field operations The population will be as at the sunrise of March 1, 1981

After the count is over, equally massive and important tabulation operations will begin We hope to maintain the tradition of early publication of basic data on the important characteristics of the population

The Census organisation in our country has a long and distinguished record or producing not merely demographic data but also valuable exports on social and ethnographic aspects of the population. We intend maintaining this tradition and orient some of these studies to current needs. To assist policy makers in regional planning, it is proposed to undertake special studies and mapping projects. These studies will include studies on urbanisation, rural-urban differentials in infrastructure and an extensive mapping project on regional characteristics

The planning of the census of India 1981 has progressed considerably and by early 1979 the organisation will be geared up for the massive operations ahead. The tempo will gain increasing momentum thereafter, culminating in the count in February 1981. Our projections indicate that India's population in 1981 will be of the order of 672 million the second largest population in the world Nearly a million and a half enumerators will be in the field in 1981 canvassing the census schedules They will visit each house during the houselisting phase in 1980 and during the enumeration in 1981 They have a difficult statutory responsibility to complete the work within a set period They can do so only if each one of us extends to them our full cooperation and spares some time The census depends heavily on public coopera tion and we are confident that this will be forthcoming in abundant measure

The results of the census are of basic importance not only to government and research organisations but to each one of us The census results influence policy on essential social and economic questions and investment in public welfare is often dependent on these data. It is this that makes the census so important and it is this that makes it important for each one of us to ensure that it is a success □

Revival of Khadi centre creates Job-opportunities

LIFE IS AGAIN brimming with activity in the small village of Badanavalu in Nanjangud block of Mysore district. The once famous Khadi Centre was for sometime in a bad shape and it was closed during 1973.

This Khadi Centre was started as far back as 1927 when Gandhiji visited the place. During freedom struggle when the movement was in low key in the erstwhile princely State of Mysore, the Badanavalu Khadi generated new inspiration among the youngsters of Mysore to take active part in the fight for freedom. Ironically this Kendra was started by the then Princely Mysore Government and Sir Mirza Ismail, Dewan of Mysore was the brain behind it Afterwards it was converted into a cooperative society.

Thanks to the initiative of hadi and Village Industries Board, all the industries which were in full swing earlier—(1) Khadi Cloth Manufacturing Hand looms Centre, (2) Silk Reeling and Weaving, (3) Hand-made Paper Unit, (4) Fibre industry based on Kattale Plant, (5) Match Box making unit, (6) Oil manufacturing unit and (7) Carpentary—have again started functioning since last year

Fancy Consumer Articles like bags, flower pot hangers made out of kattale fibre are exported to African countries The centre has now received orders for the export of match boxes to U S A. and Khadi lovers have their favourite Badanavalu Khadi Cloth again to wear Khadi cloth was synonymous with Badanavalu, in the then Mysore State

The Badanavalu Centre has provided employment to nearly 300 persons—all belong to Badanavalu village area Majority of them belong to Scheduled Castes and Scheduled Tribes With a total investment of rupees eight lakhs, the Centre has rupees four lakh working capital and produces many attractive items for thousands of Indian and foreign customers

FPO, Mysore

Population Education in Schools and Colleges

N. S. Balasubramanian
Professor and Head of the Faculty of Economics,
N.M.S.S.V.N College, Madurai

POPULATION GROWTH in a given period implies excess of births over deaths in the same period. Growth becomes multi-dimensioned when there has been continuously declining mortality rates couped with more or less constant fertility rates. Almost all the devloping countries have been experiencing exploding population owing to this secular trend. A glance over the following two tables gives a clear picture with which world population grows and will increase in the near future

World Population (in milions)

Year	Population
AD. 1	300
1750	791
1800	978
1850	1,262
1900	1,650
1950	2,515
1970	3,632

Projected Population of the World

(in millions)

	1970	1980	2000
Developed regions	1090	1275	1460
Less developed regions	2542	3658	4926
Total	3632	4933	6386

India stands second among the top ten countries of the world having large population. These top ten countries contain nearly 64 per cent of the world population and face unprecedented population explosion. These economies, especially India, is experiencing a very high cost of population growth which fall under three principal heads. They are: (i) age composition, (ii) absorption of capital and (iii) pressure on physical environment.

There have been several indices of overpopulation in the Indian economy ever since 1921. The problem became more acute after independence as a result of revolutionary impact of the advancement in medical and surgical spheres. The dependancy load has considerably increased. According to 1971 census nearly 42 per cent of the total population were in the age group 0-14 and 5 per cent of the total population were in the age group of 60 and above. The economy has been facing several problems mainly owing to rapidly exploding population. The increasing population as well as the cost of employment creation have belied most of the assumptions of the planners. To cite an instance, the creation of a single additional job costs Rs. 5850 in the first plan. The rates increased to Rs. 7030 per job during the second plan. In the third plan it was estimated to have declined to Rs. 6940 for every single new job. As a result of unprecedented growth of population and several inherent inabilities of the economy, nearly 48 per cent of the people in the rural areas and 41 per cent of the people in urban areas are found to remain below the poverty line even after three decades of development.

The new population policy involves two types of measures—immediate measures and long term measures. Immediate measures imply all measures which will increase the number of people to adopt the ways and means to restrict the number of births including sterilisation. Due to stagnation in family planning programmes, in the last two years it is understood that the achievement of a birth rate of 30 per 1000 in 1978-79 has to be postponed to about five years. Since 1978-79 steps to avoid such stagnation are included in the immediate measures. Long terms measures involve raising the age of marriage both for males and females. Government will favourably consider the argument for maintaining the same representation in parliament for the states which implement family planning schemes actively. Effective steps are being taken by the government both in the short and in the long term measures.

Population Education

The long term measures which have not so far been given its due importance, is the introduction of population education in schools and colleges. This is a permanent measure without any further financial commitment on the part of the government and population education should be introduced in curriculum stage by stage.

Elementary stage.—Certain attractive slogans such as 'Small family for prosperity', 'Nation needs only smaller family' etc., may be coined in regional languages and should be imparted to the children even in the elementary stage so that these ideas go deep into the young minds of the future citizens of the country. This has undoubtedly a favourable impact in the long run.

Secondary stage.—Students must be given proper instructions which provide basic knowledge to them regarding the dimensions of population viz., size of population, rates of growth of population, composition, distribution and quality of population. Elementary informations as to how the growth of population functions as an effective retarding factor to rapid economic growth may be provided. When the students reach the final stage in the secondary education and/or higher secondary education, proper guidelines for having controlled family may be provided. Since most of the students may wind up their studies at this stage such an education will have definitely positive and favourable impact on the students—potential parents

(Contd. on page 30)

A New Concept in Planning

N. N. Sen
Secretary, West Bengal State Planning Board

TODAY PLANNING in India is rightly looked upon as an instrument of effecting and accelerating growth, removing poverty, generating employment, securing social justice and attaining economic self-sufficiency and self-reliance It is in a sense an exercise in social engineering and a frame of policy-mix designed to make possible the realisation of developmental goals and egalitarian objectives within a definite time-horizon. Apart from increasing production and productivity at the national, regional and sectoral levels, the plan in its totality aims at the multidimensional transformation of the society and bringing about greater equality which in the words of Gunnar Myrdal is 'almost a condition for more rapid growth in underdeveloped countries'. The end results of planning and plan implementation must needs be not only the targeted rise in the Gross National Product and the national income, but also commensurate increase in the per capita income, substantial reduction, if not complete elemination, of regional imbalances and disparities in income and wealth and raising the standard of living of the common man

No right-thinking man will ever raise any question about the need and desirability of planning in India. As a matter of fact, it is now a universely accepted norm for promoting and maintaining all-round socio-economic development.

During the last 25 years, the country has gone through 5 Five-Year Plans and 3 Annual Plans. The Fifth Plan was, however, cut short by one year and terminated on March 31, 1978. These plans had a more or less common pattern and similar strategy with minor variations. But the new Government has sought to change the plan pattern and re-orient the planning strategy and has accepted the concept of rolling plan in the planning process to make the it more effective

Significant Difference

Conceptually, there is not much of fundamental difference between the newly conceived rolling plan and the earlier five-year plans so far as the broad plan objectives are concerned. Nevertheless, there is significant difference in the plan strategies and the methodologies of plan implementation It is also true that under the rolling plan devised and advocated by the Planning Commission there is greater emphasis on decentralised area-based planning rather than on Sectoral Planning and the main thrust of the investment strategy under the new plan would be to increase substantially the employment content of the plan so as to effect removal of unemployment within 10-year period. This area approach perforce calls for a dynamic manpower, planning for the optimum utilisation of the vast idle manpower of the country for productive purposes. The proclaimed re-orientation of the plan envisages considerable reshuffling of the sectoral allocation of resources from urban to rural areas and from capital intensive industry requiring sophisticated super technology and high energy input to agriculture and labour intensive small-scale and rural industries based on low-cost intermediate technology. The rolling plan thus marks a significant department from the planning process adopted in the past, though not a complete break with it. Under the rolling plan the Planning Commission will prepare the five year plans and every year the planning parameters and projections will be drawn up afresh in the light of the actual performance and keeping in view the state of plan implementation in the major sectors of the economy like agriculture, industry, power, etc., revise the plan for the remaining four

years and prepare one for the fifth year. In other words there will be Five-Year Plan in perpetuity and at any point of time the country will have annual plan under implementation with a Five-Year Plan in perspective.

Action Oriented Plan

The concept of rolling plan has been criticised in various quarters as rolling up of the plan or rollover planning or ditching the plan, or a non-solution, or good-bye to planning. But the Planning Commission has defended the rolling plan as an action-oriented plan in which the performance will count and matter and the disquieting phenomenon of wide gaps between targets and achievements which by and large characterised the previous Five Year Plans, will be largely eliminated. According to Prof. Raj Krishna, Member of the Planning Commission, 'there would be perspective planning as well as fixed strategy under the concept of the rolling plan and what is intended is to strengthen the planning system and not to dilute it'.

The rolling plan, it is claimed, will have greater flexibility and less rigidity in the matter of allocation of resources and in changing plan priorities if the situation so warrants. Under it, projections and allocations will not be allowed to float and an element of in-built check and evaluation will be introduced. The rolling plan is expected to enable the Planning Commission to co-ordinate the plan and the budget, supervise and regulate expenditure on schemes and projects, apply brakes and revise targets if and when necessary, stall inflationary trends and ensure rapid growth. Under the new plan—making exercise there is emphasis on establishing a greater measure of rapport, which was almost rare in the past, between the Planning Commission and the Finance Ministry on fiscal and price policies. This is doubtless a plus point for the planners.

Review and Evalution

Under the scheme of the rolling plan there will be a review and an evaluation of plan implementation every year instead of mid-term appraisal as was the practice in the past. Through this process the Planning Commission is expected to be in a much better position to assess the impact of the plan each year and make suitable readjustments in plan priorities and targets

The rolling plan concept might have created some misgivings among the State Governments about the possibility of downward revision of plan allocations as a result of annual appraisal and reviews. As against such apprehension the Planning Commission may argue that revisions can be upward also and that the reviews are primarily meant for removing the lacunae in the planning mechanism and the implementation process.

When all is said and done, the success of the rolling plan will largely depend on evolving a sound evaluation and monitoring system which, in its turn, will need an efficient statistical system for facilitating quick collection and collation of reliable data and a correct analysis of the same. Luckily the country has a good Statistical System with the Central Statistical Organisation in the Ministry of Planning which working with the National Sample Survey Organisation and the State Statistical Bureaux in a co-ordinated manner can ensure timely availability of the required data

---

Population Education

(Contd from page 28)

At the college/university level or at any higher training stage every student must be imparted with the need for population control and ways and means of controlling birth Every teacher must be made to play an active role The role of women teachers in this line will be very effective as they are in a position to closely and confidentially advise their students—potential mothers Knowledge of population control devices on the part of a woman will have immediate effects when compared to that of a man.

There may be three objections to this measure - introduction of population education in schools and colleges.

(i) Empirically authentic and reliable assessment of the effects of such a measure may not be feasible. Any assessment regarding this may be crude and/or arbitrary in nature

(ii) The quantitative size of the student population when compared to the total population is meagre. Therefore the results/effects may not be impressive.

(iii) The students in schools and colleges, with their immaturity of worldly knowledge, when imparted with the sex education as well as methods to control conception may lose their morality This will create a socio-cultural problem

The above arguments do not hold good. It is true that the chances to have empirically authentic assessment are meagre, but this need not be a deterrant factor for the introduction of family planning education, especially when there is no additional financial commitment on the part of the government. The aim of such education is to impart the implications of growing population and the ways and means of limiting their individual families. The argument that the quantity of school/college going students is limited and therefore such an education may not yield large scale effect. On the other hand this proportion of population, though small in size will exert effective influence on the society and thus contribute considerably to alleviate the intensity of the problem of growing population in this emerging economy The third objection that such an education will bring down morality of student community and thus cause to deteriorate the social morale seems to be an exaggerated one. There may be some stray cases These elements will always exist whether population education is introduced or not. The argument that morality will get deteriorated only because of the introduction of population education in schools and colleges cannot be accepted. On the other hand such an education will create a sense of responsibility, enlightened self interest and a very strong motivation to raise the age marriage and to have a planned parenthood. Thus the introduction of population education in schools and colleges as a complementary long run measure to all sorts of immediate measures will help to achieve an attitude of mind and firmness of actions that are essentially needed for prosperous India. □

Co-operative Agricultural Credit in India

A. Sivarama Prasad
Lecturer and Research Scholar, V.S.R College, Tenali.

THE agricultural cooperative credit structure, during the last 27 years, had made spectacular progress and at present the primary agricultural cooperative societies which covered about 7 per cent of the rural population in 1950-51, look after the needs of more than 45 per cent of the rural population. The average of villages has also gone upto 95 per cent. The cooperatives raise their finances both from internal and external resources. The internal resources include the share capital, the funds of the society constituted by ploughing back a part of their profits and the deposits from members and others. The external resources can be classified as borrowings and loans from sister societies, higher level cooperative institutions, Reserve Bank of India and sometimes from commercial banks also. The cooperaitves provide finances to their members by way of short term credit for seasonal agricultural operation, medium term credit for sinking and repair of wells, purchase of pump-sets, oil engines, and long-term loans for sinking of tube wells, purchase of tractors and redemption of old debts. In the earlier stages loans for the redemption of debts formed a sizeable chunk, but with the introduction of large scale agricultural development plans, the emphasis has been shifted in favour of loans for investments in land, minor irrigation projects, land shaping, purchase of tractors and so on. With a view to give broader idea about operations of the cooperative agricultural credit institutions in India the activities of various types of cooperative credit agencies are discussed in this paper.

Primary Agricultural Cooperative Credit Societies

These are the base level institutions and serve the individual farmers directly. The effectiveness of credit structure depends on the efficiency and potential of the primaries. Therefore, concerted efforts have been made to recognise the primaries by amalgamation of uneconomic units, so as to make them efficient and viable. In sixties, the trend was to organise one society for one village. The number of agricultural credit cooperative societies which stood at 1.05 lakh in 1950-51 increased to 2.12 lakh during 1960-61. But as a result of re-organisation, their number came down to about 1,35,000. The membership of such societies rose from about 44 lakh in 1950-51 to about 4 crore. The share capital of the primaries increased from Rs 7.6 crore to Rs. 32 crore during the same period. These societies give short term as well as medium term loans to the farmers. During the year 1975-76 the advances made by the primaries amounted to Rs. 1,023 crore including Rs. 70 crore by way of medium term loans. The total loans advanced by the village societies increased by about 50 times during the period 1950-51 to 1975-76. A very creditable achievement of the village cooperatives was that 35 per cent of the loans were given to small farmers against the 20 per cent stipulation of the Reserve Bank of India. Their achievement in mobilizing the deposits was also note-worthy. The present deposits are of the order of Rs. 15 crore which is approximately 6 per cent of the total working capital which is nearing Rs. 20 crore mark. Apart from providing loans, the Village Societies also undertake the distribution of other farm inputs. Recently they have also started the distribution of consumer goods in rural areas.

With a view to take care of production and consumption needs of the tribals and other weaker sections of the community, an expert committee recommended the organisation of large size Agricultural Multipurpose Societies (LAMPS). Accordingly the work of organising LAMPS was also taken up.

Farmers Service Societies

As a result of the recommendations of the National Commission on Agriculture, Farmers Service Societies were established. Upto 30th June, 1976, 212 such societies had been organised out of which 143 were financed by Commercial Banks and 63 Cooperative Banks.

Central Cooperative Bank

These are the federations of the Village Level (Primary Agricultural Cooperatives) Societies and are mostly located at district level. Initially many districts had more than one Central Cooperative Bank but as a result of the directive of the R.B.I to have only one Central Cooperative Bank in each district their number came down from 505 in 1950-51 to 345 by the close of the year 1975-76. The share capital of the Central Cooperative Banks increased from Rs. 4 crore in 1950-51 to Rs. 230.10 crore as on 30th June, 1976.

Nearly 28 per cent of the share caiptal of these banks is contributed by the respective State Governments. Their performance on the deposits mobilisation front, at present of the order of Rs. 100 crore is really enviable. During the year 1975-76 the loans advanced by Central Cooperative Banks were in the range of Rs 1,700 crore. The average share capital per bank shot up from Rs. 80,000 only in 1950-51 to Rs. 67 lakh in 1975-76. Similarly the deposits per bank increased from Rs 7.5 lakh to Rs. 267 lakh over the same period. During the year 1975-76 these banks opened 373 more branches. Lately, these banks have diversified their activities and at present in addition to financing agriculture they also finance dairy, poultry, piggery and small industrial units.

State Cooperative Banks

The State Cooperative Banks which are the apex banking institutions serve as a vital link between Central Cooperative Banks and the Reserve Bank of India. In addition to the borrowings from R.B.I. on behalf of

(*Contd on page* 33)

Role of D I C in the R and D of Small Firms

S. Koteswara Rao
Centre for studies in Science Policy
Jawaharlal Nehru University

RESEARCH and Development (R and D) is important for the survival and growth of companies both big and small. Inspite of our professed commitment to expand and foster small sector in preference to big industry in order to provide employment to millions of job seekers comparatively little attention is pai dto the role of R and D in small industry to make them viable and growth oriented.

Growing sickness

One of the main reasons for the growing sickness of industries in small sector lies in their inability to grow. An industry which does not grow not only stagnates but in no time becomes sick. Growth of small industry does not result automatically by reserving number of products exclusively for small sector. What is more important is its competitivness to satisfy a want more effectively and in a meaningful way to justify the special incentives given to them. As long as this is not realised the proliferation of big units will continue to take place, as in the past, whatever may be our philosophical predilection for small and village industries. For example in 1951 ceiling was placed on the production to textiles in the large mills to foster the growth of the handloom sector. But by 1961, while the output of the handlooms had risen only marginally, the powerloom sector had grown from 23,800 looms to over 14,00,000, loans. Apart from the administrative deficiencies to check the growth of Powerlooms sector, what is responsible for the failure of the handlooms sector, to grow is, its failure to satisfy customer wants in a way that will make the customer willingly pay for the higher price of the handloom product It is here R and D has a role to play in the small and village sectors Similarly the very idea of expansion of small sector implies not merely the growth in number of small scale units but also the growth of existing units If numerical growth is the only indicator of growth, with a sense of satisfaction, though false, we can boast that the small sector growth between 1972 and 1975 is about 400 per cent. The number of units has nearly quadrupled from 1.40 lakh to 5.30 lakh during the same period. So the growth of out-put of existing units is of utmost importance. Progress of existing units implies their continuous technological expansion appropriate to their resources This will be possible only when they make use of R and D

Limited Resources

The Draft Five Year Plan 1978-83 in its review of the past, explicitly pointed out, "It is not clear, however, that all the areas of research have the social and economic relevance that would justify of our limited resources to these fileds Small and cottage industries and other rural activities have not received the research and development support that they required". Given the resource situation as it is the units in small sector are not in a position to undertake R and D without the needed assistance from the government. Even those firms that can afford undertake R and D on a very small scale, are subject to many constraints compared to the large organizations. It is difficult for the small firm to attract highly qualified people. The small company seldom can match the salaries and fringe benefits offered by large firms. Given the value system we nursed, many scientists and engineers simply prefer to work for a large campany. One of the more serious difficulties facing the small firm is the R and D professional who in addition to being qualified in one particular discipline, must also be at least partly qualified in other disciplines to solve various problems. A large company can afford to put together teams of specialists to solve a multidisciplinary problem whereas the small company at best can employ a one-man team. The small company professional, in addition to his R and D skills, must also possess management talents. He must be capable of shifting between research, development, and production. He must be a specialist in many areas. In addition, a small company with only limited available capital cannot afford to finance many unsuccessful projects. They do not have the financial capacity to sustain long-term losses in their R and D efforts. To do so could force the company out of business. Thus investor-intrepreneur of a small firm is faced with a myriad of other problems.

Research and Investigation

Despite these drawbacks, small firms have to undertake R and D to make themselves competitively growth oriented units. The Draft Five Year Plan 1978-83 in some measure recognized the significant role that research and development can play in the small firm and the Draft Plan says "efforts will be made by the staff of the District Industries centres to indentify technological and other problem of small industries and to arrange for research and investigation on them through local and other concerned educational and technical institutions. For this purpose, the facilities for research and common services will be expanded" It is a welcome development compared to other plans because the role of local institutions in the development of technologies needed by the local firms is clearly recognized. But the R and D task can not be left completely to the government laboratories and other outside agencies because the relationship between quantity of ideas generated outside the firm and the quality of the firms product is not a straight jacket simple relationship. Without going into the process of creativity it can be pointed out that the personnel of the small firm are

definitely in a better position to find out improved techniques ot production, marketing etc. than the outsiders because of the familiarity and engrossment in their problems and the stakes they have in developing a suitable technology concomitant with its inventory of resources.

Direct Financing

It is this aspect that failed to receive th edue attention in the sixth plan. What is needed is, that the Sixth Plan should allocate at least Rs. 40 crores for the task of financing directly R and D in small firms. This sum can be distriibuted at the rate of Rs. 10 lakh to each District Industrial Centre among the 400 D I C contemplated in the Sixth Plan period D.I.C can utilise this R and D fund to finance the research efforts of the local small firms, using the criteria of the relevance of the applicant firms research to the needs of the local people, possible employment potentiality of the technologies planned to be developed, capital intensity of such technologies and to which strata of society the fruits of such research will accrue etc. What is utmost importance is continuous monitoring of the performance of the beneficiary company in utilizing the research funds for the purpose for which they are given to it. Continuous monitoring and the feed-back to the D.I C. will result in effective utilization of the funds by the small firms. What is needed to give perpetual motion to this activity is that we have to find ways and means to augument the resources of D.I.C to carry-out its research financing operations of the needed local firms, without much dependence on central and state governments in the long-run We can make a provision while extending financial assistance to the company that it has to pay D.I.C annually 10 to 15 per cent of its profits generated by the development of new technologies as a result of the assistance given by the D I C This procedure acts both as ameans to secure financial resources over the years by the D I C and also as a barometer to judge the performance of D.I C as far as its Rand D financing activities are concerned. With a clearer and more penetrating vision of the role of R and D in our developmental efforts we can hope to realise our cherished desire of production by massess Let us have a beginning in this direction through District Industrial Centres participation in the R and D efforts of small industries □

Cooperative Agricultural Credit in India

(*Contd from page* 31)

the Central Cooperative Banks these banks also make advances out of their own resources. The number of Central Cooperative Banks rose from 15 in 1950-51 to 26 in 1975-76. Their share capital also showed an upward trend from Rs. 1.58 crore to Rs. 63.46 crore during the same period out of which 30 per cent was contributed by the Government. Like other credit instiutions, these Banks have also been making noteworthy contribution to the development of agricultural credit and during the year ending 30th June, 1976 their deposits increased by Rs. 17.80 crore. Proportion of deposits to total working capital moved up from 46 per cent to 50 per cent during the year. Their total working capital during the year 1975-76 went up by Rs. 100 crore and touched an all time high figure of Rs. 1,287 crore. The advances made by State Cooperative Banks during 1975-76 were of the order of Rs. 2,400 crore. The number of offices of the State Cooperative Banks was 278 as on 30th June, 1976.

Land Development Banks

Last year, the land development banks celebrated their five decades of service to the nation. Their record of achievement could very well be compared to that of short and medium term sector. During first five year plan, these banks could advance only Rs. 640 lakh while during the Fourth Plan this figure went as high as Rs. 7,80 crore The land development banks had a programme of advancing Rs. 1,500 crore during Fifth Five Year Plan out of which Rs. 600 crore were advanced during first three years of the plan. The number of Central Land Development Banks was five in 1950-51. The number increased to 19 during 1975-76 and the number of Primary Land Development Banks went up from 268 to 870 over the same period. The number of Central Land Development Banks was 631 on 30th June, 1976. Land Development Banks have been providing finance to small farmers on an increasing scale. Earlier they were providing 20 per cent to 30 per cent of the advances to small farmers, but recently many Land Development Banks have taken a decision to advance a minimum of 50 per cent of the total loans to the small and marginal farmers. A very noteworthy feature of these banks is that they have acquired the technical expertise and valuable experience in providing much needed services to the farmers. They are in a position to objectively assess the requirements of the farmers and give them whatever guidance they want, like the purchase of machinery and its optimum use

Reserve Bank of India

The Reserve Bank of India provided short term credit limit under section 17 of the R B.I Act to the State Cooperative Banks at concessional rate. During the year 1975-76 the RBI sanctioned credit to the tune of Rs. 612 crore against the limits of Rs. 490 crore sanctioned during the previous year. The Bank also sanctioned supplementary and special credit to the extent of Rs. 106.60 crore It has taken a decision to raise the short term credit limit eligibility of the Central Cooperative Banks from 3 to 4 times of the own funds to 3 to 6 times of their own funds. This will facilitate a greater flow of the funds to the agricultural cooperative sector □

Rural Communication in India

R. K. Bhatnagar
Science Officer, A.I.R.
New Delhi

COMMUNICATION plays a vital role in providing the infrastructure for rapid economic growth. It has also greatly helped in creating social awareness. Although rural areas have significantly contributed to the development and economic growth of our country, many segments of such areas are deficient in basic services and facilities. In our country, there are very many pockets of habitats which remain cut off from the main stream of development. As a result, people there, are still imbued with taboos and superstitions, illiteracy and ignorance Hitherto provision of communication facilities remained undeveloped. Establishing telecommunication network in urban areas is financially a viable proposition However, in rural areas, such facilities are not economically self sustaining. On the face of it, extension of rural telecommunication will put strains on economy but there cannot be two opinions that indirectly, it has great potential for the uplift of rural areas. Communication with remote rural areas can therefore improve the quality of life in a big way.

Satellite Communication

Three years ago, a satellite communication experiment (SITE) was conducted in India covering 2400 villages under its radio umbrella. It was world's first communication satellite used for broadcasting T.V. programmes directly to local receivers in remote areas. The SITE programme was aimed at educating and enlightening the rural folk. Success of this, opened up new vistas for the expansion of adult education and literacy schemes. It went a long way in galvanising the rural life. In recent years, emphasis has been laid on providing rural telecommunication which is now a part of integrated rural development programme. Advancement in technology has also made it possible to provide telecommunication services for remote areas economically. But in a vast country like ours, where rural conglomerations are widely scattered, this is a gordian's knot. The proposal is strewn with impediments of techno-economic nature. Extension of telephone and telegraph facilities—the conventional telecommunication means, are not feasible because of huge costs and complexity. Satellite for broadcast is a viable proposition for coverage of vast remote areas but the cost of setting up a broadcast satellite is prohibitive. Also high standards of expertise is required in this direction.

Rural Telecommunication

In August, 1978 a meeting of a group of experts constituted by the committee for co-operation of non-aligned countries was held in New Delhi to peruse the possibilities of co-operation in this field. There was a consonance of opinion of participating countries on the point. Experts attending a seminar on rural telecommunication held in New Delhi during September, 11 to 21, 1978 were of the opinion that only a cheaper and simple tele-link can be a feasible proposition. They recommended the use of smaller automatic exchanges, very high frequency (VHF) and ultra high frequency (UHF) circuits for access to remote areas. The seminar, which was a part of UNDP and ITU activity, was held to study problems and setting priorities for provision of effective rural tele-communication. Electronic developments like special telephones, line amplifiers, signalling extenders, were proposed to augment the rural telegraph and telephone services. Possibilities of using high frequency troposcatter links also came up for consideration In remote areas, providing power to communication network is another hurdle. However, development of cheaper solar cells can solve this problems. Solar cells are devices which convert sun light into electricity directly. Wind is also considered by experts as prospective power supplier for small units in rural areas.

In India, plans are already afoot for launching a domestic satellite system INSAT—acronym for Indian National Satellite. Within a couple of years, it will have facilities for direct television broadcast to rural areas. It will also strengthen the telephone and telegraph channels.

Plan Allocation

The Planning Commission has tentatively approved the draft tele-communication plan for 1978—83 at a financial outlay of Rs 1850 crore. Forty four per cent of this (Rs. 814 crore) has been earmarked for backward areas. This also includes an allocation of Rs. 37.5 crore for tribal areas. The objective behind such a significant plan are three folds : to build up a communication infrastructure for rural development, to open up backward, tribal and hilly areas and to generate maximum employment opportunities.

Providing postal facilities in villages is also a part of remote communication. At present there are more than 3.65,000 letter boxes, 67,729 mobile post office, covering 99.5 per cent of villages by dak delivery service. In the current plan period, (1978—83) provision has been made for covering 5,75,000 villages by letterbox facilities. Delivery system is also to be strengthened during the plan period by 50,000 delivery agents. There are 17,908 telegraph offices and 8730 long distance public call offices. In 1978-79, 2000 public call offices and 2300 telegraph offices are proposed to be opened.

One can now expect a great social and economic impact the rural telecommunication is going to make on Indian scene in near future. ☐

BOOKS

Project Formulation

Project Formulation in Developing Countries
by P. K. Mattoo I.A.S., *Macmillan Co., Ltd. India —Pages* 268; *Price Rs.* 30

THE GROWING disillusionment with aggregative models which do not explicitly account for treatment of development problems with their location specific characteristics has prompted the need for formulation of investment projects on sound scientific principles consistent with national planning goals. The subject has aroused considerable interest since early sixties, thanks to the pioneering work done by international agencies like UNIDO and the World Bank. The latter institution had considerably added to the volume of literature on the subject through the reports on various project identification and appraisal missions. The concepts and techniques that were developed in the advanced countries however needed to be adapted to suit the conditions of developing economies. The present volume is in response to such a need and deals with all the stages of project formulation viz., from project identification to the final stage of project appraisal, when the project is finally grounded.

The main stages of analysis in the process of project development as indicated in Chapter 2 and further elaborated in the subsequent seven chapters of the book relate to feasibility analysis, techno-economic analysis, social-cost benefit analysis and project appraisal. The techniques discussed in varying detail include systems analysis, operations research, market research besides PERT/CPM and cost-benefit techniques. The main merit of the book is that it summarises the principal contributions to the conceptual and operational framework of project formulation and discusses in depth the important issues confronting management both of the proposer as well as sanctioning organisations. No doubt the various elements of project formulation as discussed here overlap to an extent and in actual practice rarely are observed to follow the prescribed sequence. Project evaluation or appraisal which is the last link in the process, is an exercise often undertaken by a completely different Group of people who may consult the proposers. However, the information requirements of the Project Appraiser need to be built into the proposals, if only, to improve its acceptability. In this regard, therefore, an awareness of the current concepts and techniques of project evaluation helps. The reader will thus find in th's book exhaustive reference material on the more important aspects of project development. The usefulness of the book is enhanced bv the addition of selected Bibliography at the end of each chapter to facilitate further research on the subject. In like manner, the utility of the book would have further improved with the addition of case material to illustrate the application of the techniques used, for instance resource levelling in the discussion on PERT/CPM methods, shadow pricing in social cost-benefit analysis etc. This would have lent susbtance to the claim of the Author in the Preface that concepts developed in the more advanced countries needed to be suitably modified to meet local conditions in developing economies.

A refreshing feature indeed, is the inclusion of chapter on Project design and Net work analysis providing detailed description of the use of PERT/CMP a technique that is increasingly being resorted to both for planning and monitoring of projects. Much of the recent literature on the subject of project evaluation treats the topic as a subsidiary one without integrating it with financial and economic analysis of the projects. Indeed at the national planning level, such techniques have been established for the larger public sector projects in regard to plan formulation and allocation of scarce resources. There is, however, no reference to this aspect in the book as also the various guidelines for project feasibility etc., earlier issued by the Planning Commission. Reference to these would have completed the discussion as also illustrained the innovations introduced at the operational levels.

There is considerable repetitive material as also some lengthy asides on definitions of terms etc. which tend to clutter up the main narration or elaboration of the techniques. The presentation could be further improved by rearranging the text for instance, the description of project life cycle more than half-way through the book could more appropriately come in the Introductory chapters. Some of the graphs presented in the discussion on financial analysis, for example, the incidence of variable costs do not check with standard works on Economics. But where several schools of thought flourish as in Business economics, these minor aberrations scarcely deter the value of this painstaking study or its appeal to planners and managers alike.

—K. S. V. Sanjeeva Rao

A Chariot to a Wonderland

It's Fun being Young in Korea *edited by Peter Hyun- illustrated by Dong-il Park ; Saem Toh Se Publishing Co., Seoul, Korea ; Pages* 124.

WORLD WAS young when folk stories were first told. Never those stories were written. No printer had ever seen it. From generation to generation it had been handed down, until now it had come to be written down for printing. Its Fun being Young in Korea presents a glimpse of the fantasies that occupied the minds and hearts of Korean children. Though it does not contain every folktale, poem and short story of Korea, it gives a chance to the reader to get a fairest cross-section picture.

The pages are full with humour, sadness, happiness, hope and love-like any other folklores of the world. Illustrations by Dong-il Park have been an added attraction.

This wonderful book has been dedicated to the children of the world in commemcration of the International Year of the Child 1979.

As Alice entered the wonderland through a mirror, children of modern world will enter a dreamland of folklore through this book only to find out that they are all very much alike.

—N. N. Chatterjee

Regd. No. D(D)-152

Development Notes

BHEL develops new A.C. motor

FOR THE FIRST time in the country, a large capacity, slow speed, vertical A.C. motor has been successfully designed, manufactured and tested at Bharat Heavy Electricals Ltd., Ranipur, near Hardwar. This is a 1500 KW, 6 6 KV, 493 RPM squirrel cage induction motor.

BHEL-Hardwar built motor has several modern features such as tilting pad types thrust bearings, air-to-water cooled beat exchanger and class 'F' expoxy system of insulation. This motor will be used for circulating water pump drive of 210 MW set for Bhusawal Thermal Power Station in Maharashtra. BHEL-Hardwar is supplying four such motors to Bhusawal Thermal Power Station □

Power Generation in Eastern Region up by 9 p.c.

ENERGY GENERATION in the eastern region has increase by nine per cent during November, 1978.

The Damodar Valley Corporation (DVC) had set up a record by generating over 1,000 M.W. on November 23.

Power generation in Bihar had improved with 400 M.W. generation from its own resources apart from the assistance received from Orissa system.

Power generation during the first eight months April to November 1978-79, had increased by 13 per cent over the corresponding period previous year. □

Hindustan Zinc Limited Produces more

THE HINDUSTAN Zinc Limited (HZL) achieved higher production of Zinc, lead, zinc dust, cadmium and rock phosphate during 1978 compared to 1977. Last year, the Zinc Smelter at Debari in Rajasthan produced 27,782 tonnes of zinc ingots while production of the Smelter at Visakhapatnam in Andhra Pradesh was 19,146 tonnes. Put together, 46,928 tonnes of zinc was produced against 27,821 tonnes in 1977—an increase of over 44 per cent. As a result of the start of regular production of refined lead by Zinc Smelter at Vizag, the production of lead rose from 7,588 tonnes to over 10,060 tonnes during 1978, registering an increase of nearly 33 per cent over 1977.

The production of cadmium almost trebled during the year, with the Zinc Smelter (Debari) producing 70 788 kilograms of cadmium. Zinc Smelter, Visakhapatnam, was also able to produce 18,664 kilograms of this metal. The cumulative production of cadmium during the year was 89,452 kgs. compared to 32,564 kilograms during 1977. HZL's main mining complex at Zawar in Rajasthan together with other mining units produced 10,46,119 tonnes of ore and milled 11,29,767 tonnes of ore during 1978 as compared to 9,18,344 tonnes of ore and 8,56,801 tonnes of milling in 1977. This represents nearly 14 per cent increase in the production and about 32 per cent increase in milling of ore over the 1977 figures, concentrate of 78,395 tonnes was produced as against the production during 1977 of 59,761 tonnes—an increase of over 30 per cent.

Production of Rock-phosphate at the Maton Mines near Udaipur also increased to 80,000 tonnes from 72,820 tonnes in 1977. Similarly, the beneficiation of rockphosphate increased to 61,331 tonnes during 1978 from 51,364 during 1977. As a result of this, the rock-phosphate concentrates produced during 1978 was nearly 38,000 tonnes, compared to 31,257 during the year 1977. Sulphuric Acid production from Debari and Vizag Smelters was 78,122 tonnes. Production during 1977 was 75,578 tonnes. The Zinc Dust Plant at the Zinc Smelter in Debari produced 2,749 tonnes of zinc dust as against the production of 1,754 tonnes during 1977.

The increase in production by mining units during 1978 is attributed to the stabilization of mining operations of Balaria mine and its concentrator. Higher production of lead and zinc during 1978 was possible because of progressive stabilisation of production or zinc and lead by HZL Smelter at Vizag. Steps have been taken to double the capacity of rock/phosphate concentrator at Maton.

Comensurate with the increased production, sales turnover also increased by over 22 per cent to about Rs. 4513 lakhs in 1978 from Rs. 3692 lakhs in 1977.

Rising Overseas Demand for ICF Coaches

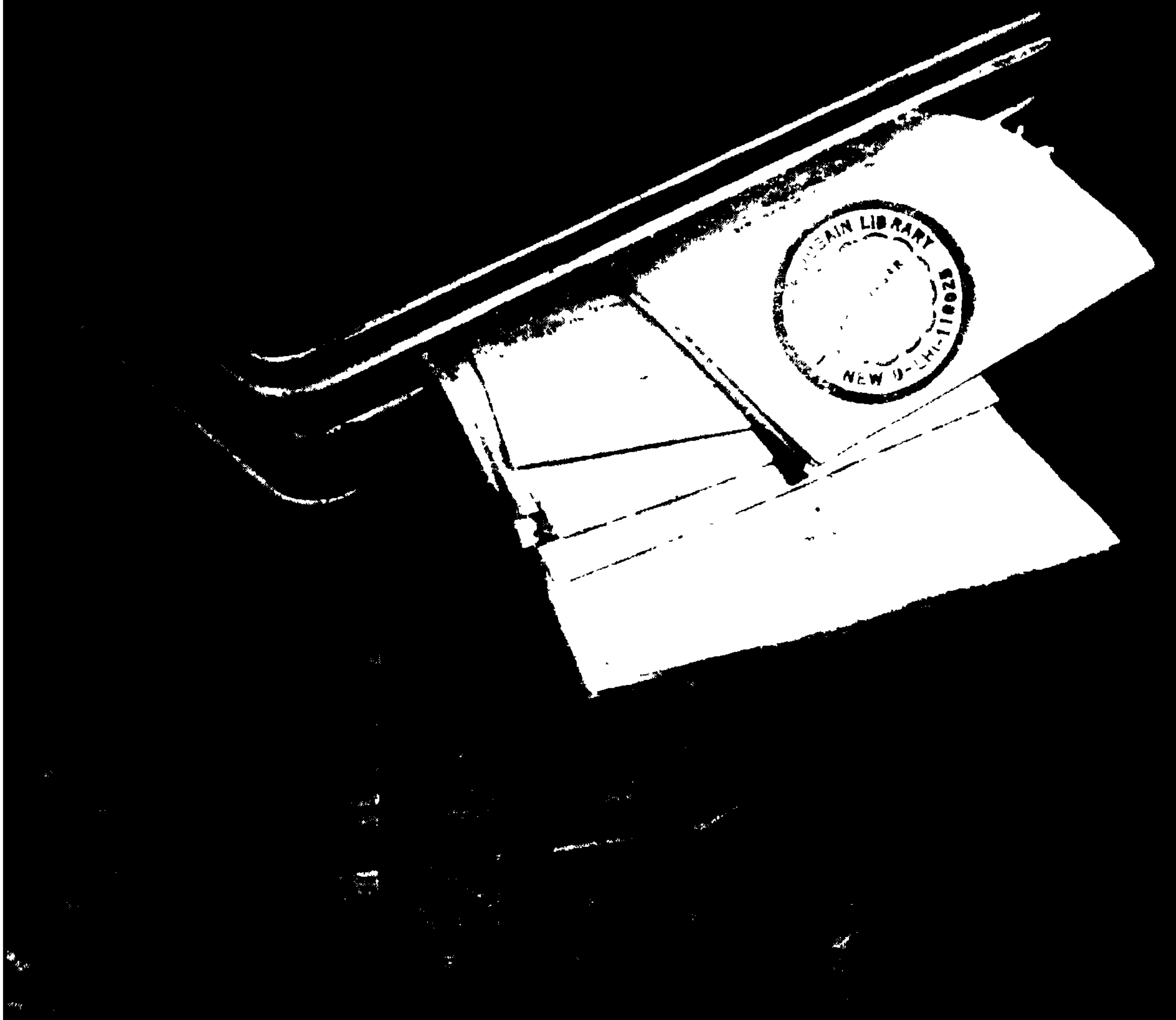
RAILWAY coaches built by Integral Coach Factory, Madras are in great demand in other countries. Recently 30 coaches—25 economy class day coaches, and five economy class sleeper coaches—were flagged off for export to the Phillippines, which gave a repeat order within four years. Uganda, Vietnam, and Taiwan have also placed orders for the supply of the coaches, and bogies So far the factory has exported 311 bog es, and 166 fully furnished coaches of various gauges. □

Spices earn more foreign Fxchange

FOREIGN EXCHANGE earnings from the export of spices during 1977-78 registered an increase of about 92 per cent, the amount being Rs. 140 crore. It was mainly due to the rise in prices of most of the spices. The major spices comprising pepper, cardamom, ginger, turmeric and chillies accounted for 90 per cent of the total export earnings. The demand for minor spices like coriander, cumin, fennel, genugreek and celery is also on the increase. □

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

yojana



TOWARDS
TECHNOLOGICAL CHANGE

EXPLORING
FOREIGN MARKETS

YOJANA

Volume XXIII Number 6

1 April, 1979

11 Chaitra, 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :

AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S K Roy
HYDERABAD : B N. Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai
Cover Design : P. K Sen Gupta
Photographic Officer : K. S. Nagaraj

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110011. **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910 385481 (extensions 402 and 420) **Circulation** : Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs.42. Foreign Subscription : One Year—£ 2.70 or $5.00. Two Years—£ 4.50 or $9.00 Three Years—£ 6.30 or $ 12.50. Single Copy—£0.12 or $ 0.25.

Uncommon Budget

WHATEVER MAY be the reactions from a wide variety of quarters, there is almost near unanimity about the nature of the budget. It is a budget with a difference. The imprint of a new fiscal strategy is clearly visible. The urban elite may fret and fume but the budget proposals mark a significant turn to rural development. The increased duties on consumer goods like soap, detergents, tooth paste and toothbrushes do not adversely affect the goods produced by small units in the decentralised sector. The basic objective is not to penalise the users but to induce them to look for such articles as are produced by the small-scale manufacturers. It is also hoped that these manufacturers will increase their share of the market for these products taking advantage of duty exemption. The duty on Vanaspati or processed edible oils, has infact been reduced because of the exemption from special excise duty. The burden is more on the life-style of those who seek prepared or preserved food, processed cheese, steel furniture, electrical appliances, safes and strong boxes Levy of a new tax on the gross receipts of hotels is intended to pinch the affluent section indulging in lavish expenditure on account of accommodation and entertainment in luxury hotels.

A CLOSE LOOK at the budget shows that rural population occupy a pride of place at the hand of its framer. Generous incentive has been given to rural development besides a massive relief to agriculturists who have adopted modern methods of production. There is no let up in the improvement of the economic conditions of small and marginal farmer, agricultural labourers, rural artisans, scheduled castes and tribes. An outlay of Rs. 258 crore has been provided for accelerating the integrated rural development programme in 2000 blocks covered by any of the special programmes and in 300 other blocks not covered by any of the special programme so far A provision of Rs. 10 crore has been made to implement the scheme for extending the subsidy on minor irrigation. Exemption of the Agricultural Refinance and development Corporation from income tax will enable the corporation to reduce by about 1 per cent the loans for minor irrigation and land development. Because of cheaper loans the farmers will be more interested in minor irrigation and land development This is in line with a similar exemption already available to the industrial Bank of India

IN CONSONANCE with the declared objective for promotion of distributive justice, relief has been provided to Consumer Co-operative Societies which supply goods to the consumers at reasonable prices. The budget raises the tax exemption profits in the case of such societies from the present level of Rs 20,000 to Rs 40,000. Life-saving drugs have been exempted from the levy of special duty. By a single stroke the budget has struck down a taxation levy, relic of the colonial past going back to 1943. Farmers in the tobacco growing areas will be completely exempted from excise duties on unmanufactured tobacco. Nearly a million of tobacco-growers, curers, small dealers and warehouse licensees will be beneficiaries. It cannot be said that the budget is anti-industry. Reduction of fertiliser price, substantial allocations for rural electrification and investment in items like cement, steel and power will eventually increase the supply of raw materials for industries like cotton-textiles, jute manufacture, oil mills, sugar and tobacco factories. Industry in our country is so much agro-based that investment in agriculture is a booster for industry.

IN certain quarters it has been suggested that the budget represents an alliance between the landlords and the industrialists which will affect adversely the interests of the other classes including the middle and the proletariat In any case, the heavy doses of indirect taxes will be resented by the consumers and trade unions There will be growing demands for wage increases both from the working and salaried classes in case an inflationary situation develops. A large uncovered gap of Rs. 1,355 crore is bound to cause anxiety despite assurances of price stability. □

UNION BUDGET 1979-80

Higher Fertiliser Subsidy

Rs. 67 crore more for Agricultural Development

Agricultural Credit at Lower Rate

Water Supply Scheme For More Villages

THE DEPUTY Prime Minister and Finance Minister Shri Charan Singh presented in Parliament on February 28, a Rs. 18,526 crore rural-biased Union Budget for 1979-80 which is marked by a deficit of Rs. 1975 crore despite a massive tax effort designed to bring in an additional revenue of Rs. 665 crore to the Central Exchequer.

The total receipts of the Central Government for 1979-80 will be Rs. 16,551 crore and total expenditure Rs. 18,526 crore.

Shri Charan Singh in his first budget, placed the overall deficit in the current year (1978-79) at Rs. 1,590 crore as against the original estimate of Rs. 1,071 crore. He added that this deficit did not include the additional burden of Rs. 555 crore that was cast on the Centre by way of loans to some States for clearing their past deficits. This being in the nature of a book adjustment was not expected to have any economic impact in the current year.

In the Budget for 1979-80 the defence expenditure is placed at Rs 3,050 crore as against Rs 2,845 crore in the current year. This represents an increase of Rs. 205 crore.

The Budget for the coming year has a provision of Rs. 12,511 crore for the Annual Plan of the Centre, States and Union Territories. The provision in the current year was Rs. 11,649 crore. This represents an increase of Rs. 862 crore or 7.4 per cent.

Inquiry into Government Expenditure

Shri Charan Singh announced the decision of the Government to appoint a Commission with suitable terms of reference to conduct a comprehensive inquiry into Government expenditure. The commission would, among other things, examine the impact of public expenditure on the promotion of growth and reduction of poverty and recommend ways and means of making public expenditure more effective in solving the problem of poverty.

The gross tax revenue at the existing rates of taxation in 1979-80 is estimated at Rs. 10,822 crore. This shows an increase of Rs. 658 crore over the Revised Estimates in the current year.

The States' share of Central taxes and duties, after taking into account the larger devolution consequent on the acceptance of the recommendations of the Seventh Finance Commission will be Rs. 3,235 crore. This is Rs. 1,278 crore more than in the current year.

Consequently, Shri Charan Singh said, the Centre's net tax revenue will be only Rs. 7,587 crore, which will be Rs. 620 crore less than the current year.

The Deputy Prime Minister expects an yield of Rs. 1,850 crore by way of market loans. The corresponding figure last year was Rs. 1,653 crore. Net external assistance has been put at Rs. 878 crore after meeting repayment and interest liabilities. By way of small savings, Shri Charan Singh hopes to get Rs. 650 crore. Loan repayments from States are placed at Rs. 554 crore. This shows a decline of Rs. 200 crore because of the debt rescheduling recommended by the Seventh Finance Commission.

Budget Estimates for 1979-80

Presenting the Budget Estimates for 1979-80, Shri Charan Singh said that while in terms of the recommendations of the Seventh Finance Commission, there has been a larger transfer of resources to States, it created serious problems for the Centre's finances in the short run. While transfer of such resources were desirable for strengthening our federal polity, the Centre's budget has to cope with these problems.

While assessing the provision of Rs. 12,511 crore as the total annual plan outlay of the Centre, States and Union Territories, an estimated sum of Rs. 835 crore has been transferred as committed expenditure from the plan side to the non-plan side in the Central and State Plans. If this was taken into account, the step-up in developmental effort in 1979-80 would be of a significant order.

New Development Strategy

Shri Charan Singh outlined Government's new development strategy as one of eradicating poverty and unemployment. This called for a radical restructuring of the priorities in our Plans. As such Agricultural and rural development, have been assigned the pride of place in Indian Planning.

Receipts Rs. 16,551 crore : Expenditure Rs. 18,526 crore

Government also recognises that the requisite degree of orientation of developmental plans can be achieved only over a period of time. However, Government proposes to accelerate the pace and thrust of programmes which has a material bearing on agricultural growth and promotion of employment.

Higher Allocation for Agriculture

The plan outlay on agriculture and rural development has been raised to Rs. 1,811 crore as against 1,754 crore in the current year. For accelerating the integrated development programme in 2,000 blocks, covered by any one of the special programmes and in 300 other blocks not covered so far by such programmes a provision of Rs. 258 crore, has been made in the coming year's budget. The focus would be on the improvement of the economic conditions of small and marginal farmers, agricultural labourers, rural artisans and Scheduled Castes and Scheduled Tribes.

Food for Work Programme

The Finance Minister has provided Rs. 50 crore for the Food for Work Programme for 1979-80 In the light of the encouraging results of the implementation of this programme in the current year, Shri Charan Singh had no doubt that he would have to increase this provision substantially. He, however, assured the members that this increase will have no inflationary impact He also said that the Food for Work Programme was becoming a major instrument of rural development and employment promotion. As a result, the original provision of Rs. 30 crore made for this programme in the current year's budget was stepped up to Rs 100 crore. This was expected to generate 40 crore man-day of work during the year.

Four Lakhs More Hectares Under Irrigation

The outlay on major, medium and minor irrigation projects including flood control for 1979-80 will be Rs. 1,488 crore compared to Rs 1,401 crore in the current year. The target for the creation of additional irrigation potential in 1979-80 has been fixed at 3.2 million hectares as against 2.8 million hectares in the current year.

The Finance Minister announced a new scheme of extending subsidy to minor irrigation works. He said that in order to increase the pace of development of minor irrigation, a scheme was being worked out for extending the subsidy on minor irrigation which was now being given only to small and marginal farmers This scheme will, hereafter, cover farmers whose land-holding is between two and four hectares at reduced rates of subsidy. For this purpose, a provision of Rs 10 crore has been made in the coming year's budget.

The plan provision for minor irrigation will be supplemented with resources available from the Agricultural Refinance and Development Corporation. The finance support from the Centre to this Corporation has been increased to Rs. 159 crore in 1979-80 as against Rs. 133 crore in the current year.

Another concession, the Finance Minister announced, was the exemption from Income-tax to the Agricultural Refinance and Development Corporation. This concession, together with the other measures that the Government was now contemplating, would enable the Agricultural Refinance and Development Corporation to reduce rate of interest at which it refinances loans for minor irrigation and land development by about one per cent. He said that the Reserve Bank of India would also take corresponding steps to ensure that the full benefit of this reduction of about one per cent is passed on to the ultimate borrower by the commercial banks. He, therefore, hoped that the farmers would find it cheaper and more attractive to invest in minor irrigation and land development.

Dairy Development

The Central Plan for 1979-80 contains a provision of Rs. 32 crore for the National Dairy Development Programme known as Operation Flood-II. This programme was expected to raise the nutritional standards of the

Relief At A Glance

The following are the tax concessions announced by Deputy Prime Minister and Finance Minister Charan Singh in the Lok Sabha.

Recent increase in excise duty on confectionary, cocoa powder, chocolates, and biscuits have been withdrawn. These will now bear a duty of only 10 per cent ad valorem.

The duty on lower priced toilet soap will be reduced from 15 per cent to 12.5 per cent ad valorem. On house-hold and laundry soap it will be brought down to 15 per cent ad valorem from the present 20 per cent. The duty on toothpaste will be reduced from 25 to 20 per cent ad valorem. The rate of duty on tooth brushes and locks reduced to eight per cent ad valorem.

Mr. Charan Singh said he proposed to introduce in due course suitable amendments to the Finance Bill to ensure that on and from the enactment of the Bill, these goods were brought back to item 68—central excise tariff, so as to attract duty at only eight per cent ad valorem.

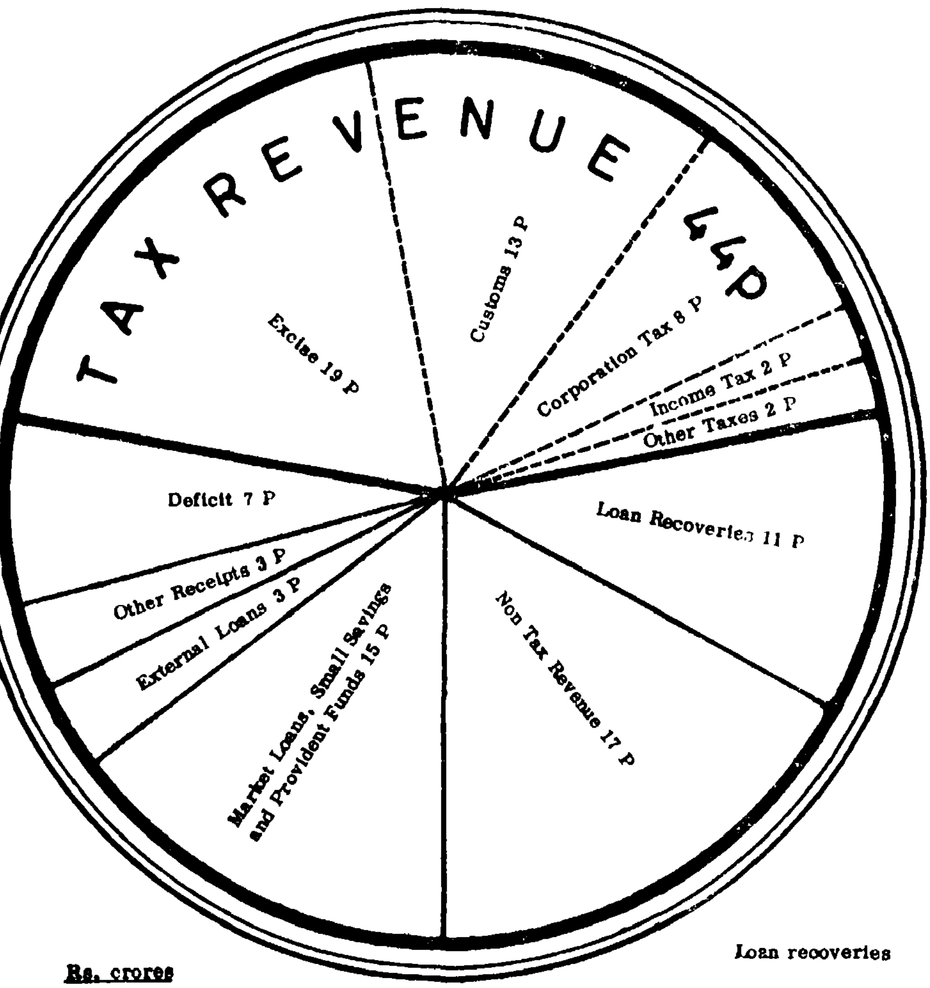
Matches : Excise duty on matches produced in the mechanised sector reduced from Rs. 9.20 to Rs. 7.20 per gross boxes of 50 each.

Footwear : Exemption from payment of excise duties raised from pairs costing Rs. 10 to Rs. 15.

Import duty on specified non-essential vegetable oils imported by the State Trading Corporation reduced from 12.5 per cent to five per cent ad valorem. Import by private parties who had made commitments prior to the canalisation of imports through STC will, however, continue to bear the levy of 12.5 per cent.

BUDGET 1979-80

THE RUPEE COMES FROM



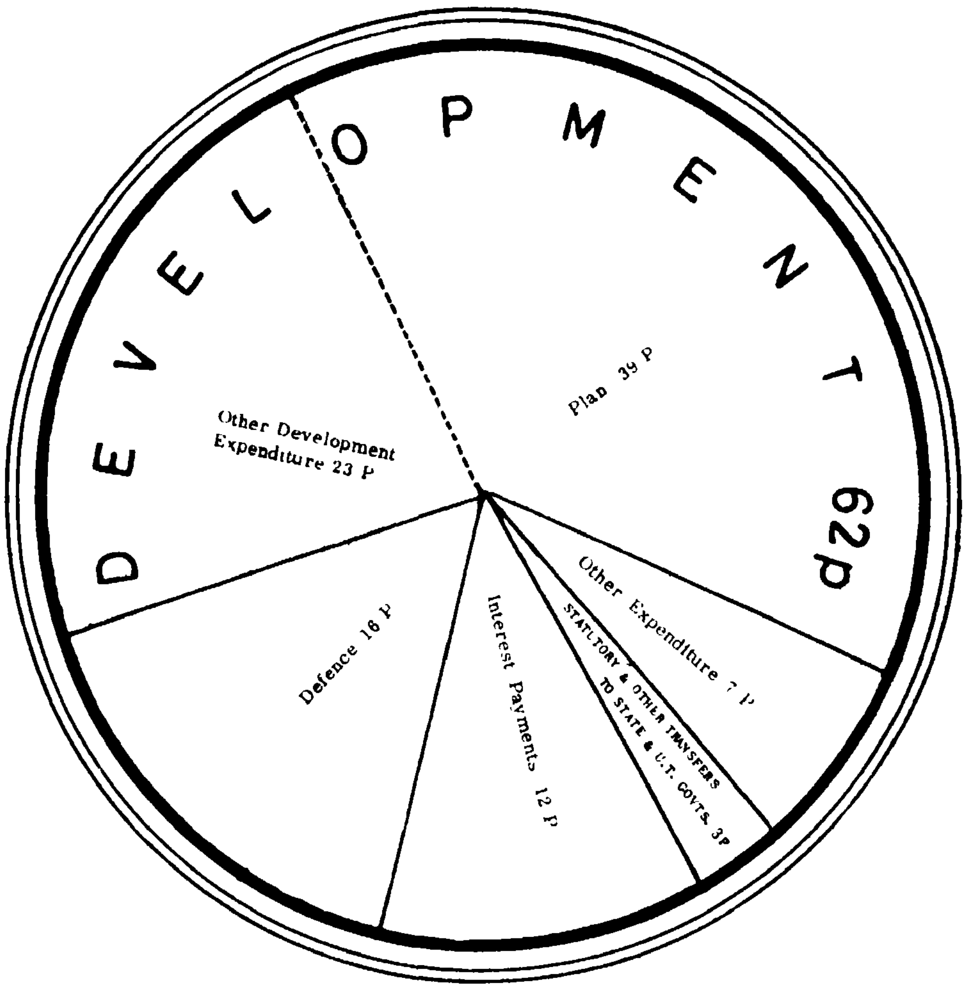
	Rs. crores
Excise	3417
Customs	2401
Corporation Tax	1530
Income Tax	436
Other Taxes	263
Tax Revenue	8047

	Rs. crores
Loan recoveries	2038
Non tax revenue	3162
Market loans, small savings & provident funds	2753
External loans	605
Other receipts	566
Deficit	1355
	10479

Tax revenue is exclusive of States' share of taxes and duties amounting to Rs. 3440 crores.

BUDGET 1979-80

THE RUPEE GOES TO



		Rs. crores
Plan :		
Central Plan	4808)	7108
State and U.T. Plans	2300)	
Other Developmental expenditure		4324
Development		11432

	Rs. crores
Defence	3050
Interest payments	2161
Statutory & other transfers to State & U.T. Governments	631
Other expenditure	1252
	7094

Transfers to States are exclusive of share of taxes and duties amounting to Rs. 3440 crores.

22 DPD/78-2

people, generate employment and augment incomes in rural areas. It is expected to provide gainful employment to ten million farming families.

Rural Electrification

The target for rural electrification in 1979-80 will be 25,000 villages as against 22,000 villages in the current year. The total outlay for the programme will be Rs 285 crore as against Rs. 277 crore in the current year. An additional sum of Rs. 50 crore will be mobilised through commercial banks, Agricultural Refinance Corporation and Rural Electrification Corporation.

Rural Water Supply

The budget for 1979-80 contains Rs. 20 crore more for rural water supply. This will ensure the availability of drinking water in 27,000 more villages. The provision in the budget for 1979-80 is Rs. 80 crore as against Rs. 60 crore in the current year.

The outlay on the welfare programmes for Scheduled Castes and other backward classes in the coming Year will be Rs. 117 crore. The Central Ministries and State Governments have been asked to incorporate a special component in their plans for 1979-80 for these categories so that there is an adequate flow of benefits from various sectoral programmes.

The Tribal sub-plan for 1979-80 has a provision of Rs. 70 crore. This will also be supplemented by the flow of funds from the State Governments under different heads of development.

Village Industries

The Finance Minister announced that for the development of village industries the budget provision for the coming year has been increased by Rs. 53 crore. The provision under this head for 1979-80 is Rs. 193 crore as against Rs 140 crore in the current year.

Shri Charan Singh said that in 1979-80, the handloom industry will produce 200 million metres more of cloth. Its target is 2,700 million metres as against 2,500 million metres in the current year. A provision of Rs. 28 crore has been made in the current year's budget to organise weavers' cooperative societies and to improve the functioning of the apex bodies and marketing organisations.

The outlay on telecommunication in the budget for the year 1979-80 will be Rs. 359 crore. It is proposed to open 5,000 new post offices and to provide 10,000 postal counters through mobile post offices.

More Funds for Agricultural Infrastructure

The Finance Minister said that the provision for power, coal, fertilizers and chemicals, minerals, petroleum, steel, roads and railways has been increased from Rs. 2,733 crore in the Central Plan for 1978-79 to Rs. 3,122 crore in 1979-80.

The allocation for the power sector has been stepped up substantially to Rs. 2,466 crore as against Rs. 2,217 crore in the current year. This includes a provision of Rs 382 crore for projects in the Central sector. A major start in 1979-80 will be the Super Thermal Station at Farakka.

The additional generating capacity in 1979-80 will be 3,000 MW, as against 2,500 MW added in the current year.

The provision for inceased fertiliser production in 1979-80 will be Rs. 254 crore. This will cover expenditure on a number of on-going projects besides providing for a start on the two off-shore gas-based plants on the west coast and an additional gas-based unit in Assam. Fertiliser production in the public sector will go up to 20 lakh tonnes of nutrients.

The budget makes an outlay of Rs. 600 crore to the steel sector. This provision, Shri Charan Singh said, had to be viewed in the context of the rising demand for steel which at present was being met by the mini steel plants. The budget provision will enable the work on the expansion of Bokaro and Bhilai steel plants to be continued besides ensuring progress on the new steel plant at Salem.

The budget allocation for the coal sector has been increased by Rs. 79 crore. It is Rs. 346 crore for 1979-80 as against Rs. 267 crore in the current year.

The budget provides for an expenditure of Rs. 622 crore towards the oil sector.

The Central budget has a provision of Rs. 120 crore for national highways, strategic roads, roads in the border areas in the North and road of inter-State economic importance.

Slum Improvement

The Finance Minister announced Government's decision to step up expenditure on slum improvement. As against a total expenditure of Rs. 43 crore on slum-improvement in 1974—78, an outlay of Rs. 190 crore has been envisaged in 1978—83. He said that if the States undertook to mobilise additional resources for this purpose by taxing the affluent sections in the urban areas, the Central Government would be happy to Supplement their efforts.

Education

In tune with the realigned priorities in the educational sector, Government propose to increase the provision for adult education in the Central Plan for 1979-80 to nearly 20 per cent of the total outlay of Rs. 84 crore for education in the Central Plan.

Shri Charan Singh said that the Government proposed to make financial provision for training rural youth for self employment. The details of this scheme were being worked out.

Family Welfare

The Finance Minister reiterated that it should be their endeavour to put the newly introduced family welfare programme on a sound footing so that the national objective of reducing the birth rate to 30 per thousand by 1982-83 from the current level of 33 per thousand might be achieved. The Community Health Workers Scheme, started in October 1977 in 741 primary health centres will be extended to cover one third of the country in 1979-80 and the entire country by 1982-83.

A sum of Rs. 560 crore has been provided towards food subsidy in the coming year. This is Rs. 10 crore less than in the current year. The amount for the fertilizer subsidy is, however, stepped up to Rs. 448 crore as against Rs. 319 crore in the current year.

The debt service charges at Rs. 2,161 crore for 1979-80 will mark an increase of Rs. 304 crore. The increase is mainly on account of internal debt.

The budget for 1979-80 provides for Rs. 232 crore by way of statutory grants to States as against Rs. 514 crore in the current year. This provision is based on the recommendation of the Seventh Finance Commission. "The Commission has also recommended additional grants to certain States to cover their net interest liability and for upgradation of standards of administration. I have not, at this stage, included any provision for payment of grant-in-aid for these purposes and shall come before the House with request for supplementary funds after the action programmes for schemes of upgradation are drawn up and finalised by the State Governments concerned and the net in-

BUDGET 1979-80 AT A GLANCE

(Rupees in Crore)

		1978-79 Budget	1978-79 Revised	1979-80 Budget
Revenue	Receipts .	10761	11020	10749 (+)460*
	Expenditure	10899	11148	11396
		(—)138	(—)128	(—)647 (+)460*
Capital	Receipts .	6585	6554	5802 (+)160*
	Expenditure . . .	7518	8571	7130
	Total . .	(—)933	(—)2017	(—)1328 (+)160*
	Receipts .	17346	17574	16551 (+)620*
	Clearance of States' overdrafts as on March, 31, 1978		555	
	Expenditure	18417	19719	18526
	Overall Deficit . .	1071	1590	1975 (—)620
	Uncovered Deficit. . .			1355

*Effect of Budget proposals.

terest liability assessed as recommended by the Commission", Shri Charan Singh said.

Revised Estimates for 1978-79

Outlining the Revised Budget Estimates for the current year, Shri Charan Singh pointed out that a number of post-budget developments had cast additional burden on the Centre

The Central Government decided to extend special loans to the States to the tune of Rs. 555 crore to enable them to wipe off their overdrafts from the Reserve Bank of India. This will help them to start with a clean slate and also avoid overdraft in the future.

Additional Expenditure

The provision to assist States to extend gratutious relief to people affected by natural calamities had to be increased to Rs 40 crore as against the original provision of only Rs. 10 crore Higher procurement prices entailed an additional expenditure of Rs. 42 crore. Similarly the expenditure on food subsidy during the current year was expected to be Rs. 114 crore more than the Budget Estimates of Rs. 453 crore. Expenditure on export assistance also went up by Rs. 130 crore as against the budget provision of Rs. 251 crore The loss on sugar exports also went up to Rs. 23 crore as against the original estimate of Rs. 10 crore

The financial difficulties experienced by a number of public sector units necessitated higher non-plan assistance than what was anticipated at the budget stage : The Coal India will be requiring an assistance of Rs. 173 crore as against the provision of Rs. 90 crore; Fertiliser Corporation of India and National Textile Corporation also stood in need of substantial additional assistance. As a result, non-plan loans to public sector undertakings will be Rs. 159 crore more than the Budget Estimate of Rs 250 crore

Higher Small Savings

The small savings fetched to the Central exchequer Rs. 165 crore more than the budget provision of Rs. 300 crore.

Central Plan Expenditure

The Deputy Prime Minister said that the overall budget support for Central Plan expenditure was expected to be less by Rs 201 crore as compared to the provision of Rs. 4,520 crore more for it This was because the progress of expenditure was somewhat uneven during the year. Major shortfalls are anticipated in petroleum, fertiliser and tele-communication projects. Oil and Natural Gas Commission would require Rs. 63 crore less because of rechasing and postponement of certain works of its off-shore programmes. Oil Industry Development Board would also require Rs. 50 crore less. Fertiliser projects would also be requiring Rs. 36 crore less as compared to the original provision of Rs 236 crore. This shortfall related mianly to Trombay-V and Cochin Phase-II Unit and the new gas-based fertiliser plant to be set up in Maharashtra The outlay on tele-communication projects will also be similarly lower by Rs 46 crore mainly due to the delay in the receipt of equipment and stores.

The shortfall in regard to the implementation of agricultural schemes will be of the order of Rs. 25 crore. Some schemes under this head had not picked up the necessary tempo, some others had been delayed in the formulation of detailed schemes and inadequate

infrastructure. He assured the House that these problems were being tackeled. Certain schemes had, however, made good progress, he added.

The Finance Minister disclosed that the budget provision for assistance to State and Union Territory plans required to be stepped up by Rs. 325 crore mainly because some States affected by floods this year had suffered serious erosion of resources and were, thus, not able to finance their approved plan outlays without additional assistance. The Rural Electrification Corporation also required higher assistance to the extent of Rs. 39 crore. Therefore, the Revised Estimates for assistance to State and Union Territory plans, would be Rs. 3,112 crore as against Rs. 2,761 crore.

Apart from the increased recepits of Rs. 140 crore from the small savings, the deposits of non-Government Provident Funds were also estimated to be Rs. 75 crore more than the Budget Estimates of Rs. 225 crore. Gold sales had fetched Rs. 86 crore when no credit was taken for this at the budget stage. Recoveries of temporary credits extended in the earlier years also showed improvement of Rs. 75 crore.

Variations in Revenue Receipts

Explaining the variations in the revenue receipts, the Finance Minister said that the receipts from Corporation and Income-tax were estimated to be about Rs. 102 crore less than the Budget Estimates of Rs. 2,577 crore. While Union Excise and Customs Duties taken together show an improvement of Rs. 145 crore, Union Excise Duties would actually be fetching Rs. 105 crore less than the Budget Esitmates of Rs. 5,299 crore. The receipts under Customs Duty are however expected to yield Rs. 250 crore more than the Budget Estimates of Rs. 1,860 crore mainly because of liberalised import policies and consequent larger imports.

Shri Charan Singh disclosed that utilisation of external aid had also slowed down mainly because of the shift from programme to project assistance by multilateral aid-giving agencies and also allocation of greater proportion of bilateral assistance from some countries to specific projects. The result was, the progress on these projects was slow and the gross aid receipts were expected to be Rs. 447 crore less than the Budget Estimates. He, however, assured the House that steps were being taken to accelerate the pace of disbursements.

Price Stability—A world Record

In his opening remarks while presenting the Budget, Shri Charan Singh claimed that the price stability which the Government had achieved during the last two years was a world record. The wholesale price index on February 10, 1979 was only 0.9 per cent above the level a year earlier and 0 4 per cent above the level two years earlier. "Such a record of price stability in a period in which national income growth was about 11 per cent would be difficult to find elsewhere in the world". This had been brought about by well-conceived supply and demand management policies. The Finance Minister underscored, in this connection, the role of increased industrial and agricultural production and liberalised import policy in vital areas. □

Industrial Output Up

INDUSTRIAL output in November 1978 was 10 per cent higher than that in November 1977. The average growth rate of industrial production between April and November 1978 had been 8.3 per cent.

Coal production increased by 12 2 per cent over the previous month and by 5.6 per cent over November 1977. Electricity generation was higher by 13.4 per cent, while steel production from the integrated steel plants rose by about two per cent. The mini-steel plants continued to do well with an increased production of 11 per cent over October 1978 and an increase of 55 per cent over November, 1977.

The output of aluminium, vanaspati, cotton textiles, jute manufactures, fertilisers, commercial vehicles, cars, jeeps and tractors showed a substantial improvement. Over the corresponding month of 1977 aluminium production increased by 14.7 per cent in November 1978, sugar production by 29 per cent, vanaspati by 30.2 per cent, cotton yarn by 17 per cent, cotton cloth by 12.2 per cent, jute manufactures by 11 per cent, nitrogenous fertilisers by 12.5 per cent, phosphatic fertilisers by 25 per cent, commercial vehicles by 18.5 per cent, cars by 32 7 per cent, jeeps by 146.2 per cent, motor cycles by 56 1 per cent, diesel engines by 41.4 per cent and tractors by 38 3 per cent.

A significant feature in the textile industry has been the record production of cotton yarn which increased by about nine per cent in the first nine months of the current financial year. Yarn output had never before shown an increase of this order in the past.

The production of the 16 public sector undertakings under the Department of Heavy Industry, during the first eight months of 1978-79, was worth Rs. 596.75 crore. This was 33 per cent higher than the production valued at Rs. 449.44 crore in the same period last year. The Engineering projects India Limited had a turnover of Rs. 62.44 crore an increase of Rs. 21.51 crore over the turnover of Rs. 40.93 crore last year.

The total production from the Bharat Heavy Electricals Limited plants, during the same time was worth Rs. 346.91 crore, 27 per cent higher than the production of Rs. 273.83 crore in the same period last year.

The turnover of Hindustan Machine Tools Limited was Rs. 98.38 crore. This is 84 per cent higher than the production of Rs. 53 59 crore last year.

Production at Heavy Engineering Corporation Limited was worth Rs. 39.38 crore which is Rs. 20.68 crore more than the production valued at Rs. 18 68 crore during the eight months last year.

Other undertakings which recorded higher production during the first eight months of 1978-79 are Richardson and Cruddas Limited (72 per cent), Scooters India Limited (27 per cent), Braithwaites & Company (16 per cent), Tungbhadra Steel Products Limited (8 per cent), Mining & Allied Machinery Corporation Limited (23 per cent), Bharat Pumps and Compressors Limited (103 per cent) and Arthur Butler (33 per cent). □

A Socio-Economic Approach to Technological Change and Development

V. K. R. V. Rao
Economist

ECOLOGICAL IMBALANCE, pollution, over-exploitation of natural resources leading to depletion, and a threat to the stability and safety of current high levels of living are all factors that are coming to the fore in the discussions that are now taking place many in the developed Western world. And as these are directly ascribed to development, a number of persons in the developing world are beginning to look askance at the whole thesis of industrial development, even as their doubts receive positive encouragement from Western commentators who are asking their poorer brethern in the L.D.C.'s to learn from Western experience and refrain from going in for technological change and accelerated rates of economic growth. To add to the picture is the evidence available from centres of modern and accelerated growth in the developing countries themselves, which seem to lend credence to the theory of the Midas touch of development. Where do we go from here, and what should be our policy in India in respect of economic growth, technological development, and ecological balance and environmental harmony?

India has a per capita national income much below current levels in the developed world and a population of several hundred millions, below the poverty-line, variously estimated as between 40 and 60 per cent of its total population. I do not see therefore, how we can give up either economic growth or technological development. At the same time, knowing the experience of the developed world and the hazards and deterioration in the quality of life that has accompanied their accelerated growth and technological advance in recent decades, we certainly cannot afford to go in for a blind imitation of the Western path of development. It is possible to resolve this dilemma and adopt a policy and a programme that will secure for the Indian people the advantages of development without the ills that have accompanied it in the West.

Development without ill-effects

To begin with, it is necessary to unscramble the development egg of the Western world to trace cause and effect of the ills that now effect them The development that has taken place in these countries is not merely the result of the application of modern technology or the continued expansion but intensification of this technology for bringing about a yet higher growth in the daily output of goods and services that constitutes their level of living There is no doubt that a good deal of modern technology does contain the potential for disturbing the ecological balance or environment harmony. However, there can be no doubt either than the indiscriminating way in which the technology has been applied and the dominance that has been given to the profit motive and the so-called economic principle of maximisation of output with minimisation of cost has landed the developed world with monster urban settlements, slums and rabit-warrens miscalled mass housing, crimes and suicides, psychological tensions and frustrations, pollution and ecological imbalance, environmental hazards, and a real threat to the future stability and security of its economic well-being. Obviously therefore, the ills that have accompanied development are traceable not merely to the new technology but also to:

(1) leaving the development of technology and its utilisation to private enterprise and its profit motive.

22 DPD/78—3

(2) going in for ideology of unlimited wants and expansion of material output.

(3) having a system of cost accounting that took into account only private costs and private benefits and ignored the relevance of social costs and social benefits.

(4) excessive attention to economies of scale and size of individual plants, and to external economies of concentration of economic activity in large urban centres ; and

(5) giving pride of place to materiality of output and conveniences rather than quality of life in setting the pace for economic activity.

These five factors, while they constituted an essential component of the development process in Western countries, do not constitute either an essential or an inevitable part of the process. It is not necessary therefore to throw out the baby along with the bath water and give up the use of science and technology for development because of the adverse consequences of its mis-application elsewhere. Nor can we afford to give up development, if we want to liquidate mass poverty in our country and give all our people the basic minima of civilised existence.

Our villages have their special problems of environmental pollution with absence of public hygiene, drinking water problems not only of safety but even of availability, non-ventilated and non-sun-receiving housing, and division into dual societies.

Moreover, environmental and ecological problems are not the result merely of modern and sophisticated technology in industry or of accelerated economic development in material terms. Problems of pollution, ecological imbalance, disease, slums and depletion of natural resources are also found in the working of a less developed economy like that of India. Shifting cultivation in tribal areas, short-sighted destruction of woods and trees without any renewal by afforestation thereby leading to soil erosion and undesirable changes in temperature and rainfall, wanton destruction of wildlife, overgrazing and over-cultivation without regard for resulting deterioration in the soil, inadequate attention to drainage in irrigation with consequent rise in salinity and loss of millions of acres of land from active cultivation, growth of slums and bad living conditions are all found present in our country In addition, our villages have their special problems of environmental pollution with absence of public hygiene, drinking water problems not only of safety but even of availability, non-ventilated and non-sun-receiving housing, and division into dual societies—the socially more backward of which is pushed into the outskirts of the village. All this has resulted in the abundant presence of an unhealthy relation between man and environment in India without even the excuse of its being a result of accelerated industrial and technological development of the type prevalent in the developed countries of the West. Ecological and environmental disturbances in developing countries like India are thus not merely a result of modern industrial development but also, and perhaps primarily so, due to the absence of an articulated socio-economic approach not only in the technology of development but also in the indifference shown to archaic and medieval conditions of living in the areas not subject to industrial development such as the bulk of our villages. The factors that are responsible for the presence of ecological and environmental disturbances in India need to be dealt with. In fact, doing so is itself a part of directing of the process of development. It is necessary therefore to subject our developmental technology as also our rural living conditions to a socio-economic approach directed towards a betterment of the quality of life and ecological harmony.

I believe that what we have to do as a nation is essentially to make up our minds consciously and deliberately about the goal of our developmental activity. Obviously, economic growth and a substantial increase in the output of mass consumption goods and services together with the capital equipment and technology necessary to maintain it and also increase it over time is a must for resolving the problem of mass poverty and enabling our population to have a basic but decent standard of living for all its individual numbers. One way of achieving this is to go in for a highly mechanised and capital intensive production system with large units and economies of scale achievable through concentration of economic activity This is precisely what the Western developed world has done, and we know with what results on ecological balance, environmental pollution, and psychological ill-bearing. Obviously we cannot desire such a kind of development in spite of its materialist temptations. Nor can be afford it in terms of the capital investment it would require or the metropolitan and large-city based urbanisation it would promote or the gigantic exodus it will stimulate from rural areas or the large and continuing problems of unemployment would create in both rural and urban areas. Our goal of economic development has to follow a path that would take account not only of the environmental and ecological experience of development in the Western world but also of the special features of the Indian scene Important among these are our large labour supply, our inadequate capital resources, and the large number of small producing units we have not only in the primary but also in the secondary and tertiary sectors in our economy. Nor can we neglect to take into account our expressed national desire not only to eliminate poverty but also reduce inequalities, prevent concentration of economic power, disperse economic activity, and prevent the continuance or expansion of a dual society in India either in terms of technology and conditions of work or elite and proletarian classes or backward rural and advanced urban areas. Thus the goal and the path have to be dovetailed and harmonised in the development process in India. Our development therefore cannot be a carbon copy of development elsewhere. Development in India has to be specifically Indian and has to fit our economic aims, our cultural heritage, our social attitudes, and our spiritual background. It must place an overriding emphasis

Economic growth and a substantial increase in the output of mass consumption goods and services together with the capital equipment and technology necessary to maintain it and for resolving the problem of mass poverty and enabling our population to hare a decent standard of living for all l

on the **quality of life, material betterment being only a means to that and rather than an end in itself.** This in broad **terms is the socio-economic approach** that we should adopt in determining the pace, content, and volume of developmental activity in India. If we do so, we would have gone a long way also in solving the problem of environmental pollution and ecological imbalance that seem to be inseparable accompaniment of industrial and economic development of the Western or Japanese model.

In evolving the details of the socio-economic approach to development indicated above, it is necessary to bear in mind the following facts of the Indian situation :

(1) Our natural resources in terms of climate, water, light, heat, land, minerals, flora and fauna are more than adequate for meeting the requirements of our existing population and some increase therein, but not so if the population continues to grow at its current rate. Even for securing more decent living standards for our existing population, let alone an increase in its number even at a much lower rate than at present, and giving it stability and continuity in the future, we need conservation, economy, and recycling in the use of our natural resources.

(2) Our human resources are abundant in quantity but lack quality in terms of physical fitness, education, training in skills, industrial discipline, social attitudes, scientific temperament, cooperative working, self-sustaining organisation, and enterprise in general Erosion in the values that make for the quality of life is also a growing and expanding phenomenon amongst the population Human resources development is therefore a key factor in the Indian developmental process, if it is to result not only in a rise in material standards but also an improvement in the quality of life and avoidance of environmental pollution and ecological imbalance associated with Western development.

(3) Our capital resources are inadequate for bringing about a rise in material amenities comparable to those found in the countries that rank high in economic development such as the United States of America and Canada, Western Europe and Japan or to counter the costs of pollution, depletion and psychological frustration that appears to be an inevitable accompaniment of such development. Indian development therefore has to set its sights to a different horizon that, while securing a decent minima of the material requirements of a civilised existence, does not go in for affluence, extravagance, wasteful consumption, vulgarity of demonstration, and indifference to the social costs of private satisfaction. This also means a deliberate restraint on the way of life of the elite and affluent in Indian society, and a levelling up of the material content in the life of the masses and a levelling down in that of the classes, somewhat on the lines of the still-born economic philosophy underlying the **draft Fifth Five Year Plan.**

There can be no doubt that spatial, demographic and resource conditions of the Indian economy combined with the need for avoiding the environmental, ecological and social ills associated with an urbanising development require the Indian developmental process to be rural-sited, dispersal and decentralised, using science and technology that will promote such an orientation of developmental activity.

(4) Though our urban population is only about 20 per cent and agriculture is still the dominant partner in the economy in terms of both employment and income, there has been enough industrialisation and blind copying of the Western technology of development to bring us face to face with the problems of pollution, ecological imbalance, large cities with their slums and overcrowding, and deterioration in the quality of life and non-adherence to basic values. Policy-makers are becoming increasingly conscious of the need for restraining urban growth especially of cities and big towns, and creating conditions that will preserve the rural profile of our spatial demography by promoting decentralisation of economic activities, going in for smaller units of production, and deliberately *sitting* them into rural areas and backward regions. In other words, we are trying to break away from the tradition that development means urbanisation ; but I am not sure if we are either aware or accept the implications of a non urbanising developmental process in terms of scientific research technology, volume and product-mix of material output, disincentives of demonstration effect originating from within and without, weakening of centralised power with decentralisation and dispersal of economic activity, and modern defence requirements. But there can be no doubt that spatial, demographic and resource conditions of the Indian economy combined with the need for avoiding the environmental, ecological and social ills associated with an urbanising development require the Indian developmental process to be rural-sited, dispersal and decentralised, using science and technology that will promote such an orientation of developmental activity.

(5) As a nation, we are now committed to the use of science and technology. for economic development. We have not really started using it for betterment of the quality of life in a big way. There is no doubt that the use of science and technology is a must for not only India's economic development but also for an all-round improvement in the quality of life of its masses in both the rural and urban areas of the country. But, even at the risk of repetition, it must be added that the use of science and technology must be in the context of Indian

conditions and suited to Indian requirements. We have the largest number of research institutes of any developing country in the world, and they are well staffed and well equipped. We have also four prestigeous higher institutes of technology and an institute of science and technology of international standard, and a number of regional institutes of engineering, a large number of engineering colleges, and a larger number of polytechnics and industrial training institutes. We have also more than a hundred universities many

Technological Development must be suited to Indian requirements

of which have a strongly developed research activities in science. And we have been talking of a great deal of intermediate technology and the applications of science and technology for rural development, especially the small units in agricultural, secondary and service occupations in rural areas. And yet so far nothing very tangible has been achieved. Copy-book applications of Western technology and concentration on the problems of the larger producing units still seems to dominate the Indian scene. There must be a fundamental and revolutionary change in the thinking and application of science and technology in the direction of low capital intensity, small producer units, decentralisation and dispersal, and use of local manpower with the minimum appropriate training. Local energy resources and local materials should be tapped to the maximum possible extent with avoidance of pollution, minimisation of the use of materials subject to depletion and maximum resort to recycling of used materials. With such a massive change in the direction of science and technology, Indian development will cease to be an imitation of Western development and acquire a quality of Indianness which will at the same time be free from the blemishes that have accompanied development elsewhere.

(6) We must also turn to the vast rural settlements in our country and do something effective to rid them of the pollution and ecological imbalance they are now subject to, even though they have no factories with smoking chimneys or life killing or polluting effluents or even the fumes from the exhausts of modern transport vehicles. Their pollution is due to the absence of personal and more particularly public hygiene, inadequate supply of water for washing purposes and even for drinking, ill-ventilated and badly lighted housing, residential mixing up of men and cattle, and use of smoky fuel without outlet. Pollution of tanks and wells is caused not only by unhygiene usage but also by the polluted material carried to them by bad or nil drainage. Recycling is non-existent with the use of cowdung as manure, and failure to make use of bio-gas possibilities. Ecological imbalance is created by the cutting down of village forests without any attempt at replacement, and cultivable land-lost due to silting and seepage of both irrigation and other water due to absence of drainage. The idyllic character ascribed to villages is a long-standing and much publicised myth at least as far as most of our villages are concerned and accounts in good part for the one-way traffic that prevails between them and our urban areas. The tragedy behind this situation as well as hope that exists for correcting it both stem from the fact that much of this pollution and ecological disturbance in rural areas is man-made and has nothing to do with either industrial development or misuse of technology. It was Mahatma Gandhi, an ardent champion of India's villages but no blind admirer of their way of life, who set about the task of rural reconstruction by

Pollution and ecological disturbance in rural areas is man-made

devising concrete steps for ridding them of pollution, ecological damage, and wasteful use of resources without any attempt at recycling. Unfortunately, Gandhiji's political activity was more conspicuous, his political strength and influence not only more exciting and inspiring but also more useful to all those who were to gain in power, wealth and prestige by the independence that he alone could bring to this country; and his economic ideas and rural betterment programmes were treated as things to be honoured when he was alive and paid lip-service and some token action after he was dead. With independence and planned economic development came gigantic irrigation works, Chemico-genetic technology geared to those who had or could get resources, and even minor irrigation works that favoured the haves and paid scant attention to the have-nots. Agricultural production increased, a newly rich and powerful Kulak class emerged in the rural areas, and affluence with its vulgar and conspicuous consumption ceased to be the monopoly of the urban areas. But the poor in the villages—and they constituted the large majority—remained where they were with but little change in their condition. The improvement in the quality of life of the rural poor without much investment but proper human resources development and with education and organisation that Gandhiji sought for remained but a pale shadow, a remainder of what had still to be achieved by his countrymen. There is no hope for any significant improvement in the quality of life of our vast rural masses unless our developmental process alters its course, shies away from giganticism, and macro results in material terms, and gives higher priority to better human resources utilisation in an integrated development of our rural areas and a betterment in the quality of life of our rural masses.

(7). **The last but not least,** as part of the facts of the Indian situation, though it does not certainly exhaust the list, is the haphazard, unplanned, pollution-laded and slums-infested growth of our cities and big towns While this is partly a result of the type of industrial development we have had and the kind of life it has promoted in urban areas, it is also partly the result of leaving these urban centres to grow on their own without direction or adequate regulation. The result is what has even been officially described as urban chaos. It is now quite clear that we cannot afford either the economic or the social costs of such urban growth. While awareness of this situation is there both in Government and the public, and town-planning departments and urban development authorities have been set up in many towns and cities, the problem continues to grow And effective action to prevent the growth of cities or even to prevent their haphazard development seem to be eluding the grasp of our planners and decision-makers. There is no doubt however that a national human settlement policy, oriented to the dangers of urban growth, the need for betterment of rural areas and the prevention of environmental hazards and ecological disturbances, is badly needed to be spelt out ; and the necessary machinery set up to implement it in all the States of the Indian Union, if we are to avoid the ills that have accompanied industrial and technological development elsewhere.

In the light of the discussion above, below are a ew examples of concrete programmes and policies that vould save Indian development from the ills of Western levelopment and at the same time orient it to Indian esources and requirements so as to give the country a ligher level of living and a better quality of life. These :xamples are only illustrative and not exhaustive.

1. While extension of irrigation is a must, it should be accompanied by a proper drainage system that vould not only save land from getting out of cultivaton but also serve recycling purposes either through vells or tanks that could be built up as an ancillary and complement to canal irrigation. It is also necessary to plan the working of our catchment areas, prevent deorestation and soil erosion, and avoid the carrying of silt in the flow of water.

2. Regulate the use of chemical fertilizers and combine it with appropriate additions of organic manure.

3. Organise a nation-wide movement for the restucturing of our villages, especially their roads, drainage, water supply and housing, in order to free them rom pollution and better their quality of life.

4. Organise a nation-wide movement for utilisation of wastes and recycling of used materials so as to increase the material output of both agricultural and nonagricultural activity in India's villages.

5. Organise and implement a nation-wide campaign for the planting of trees and afforestation of areas on the basis of climatic and environmental requirements.

6. Effectively implement a programme of providing every village with its own fuel wood forests and the use of smokeless fuel in their kitchens and industrial establishments.

7. Organise a nation-wide campaign of adult education for the promotion of public hygiene, optiumum use of local materials, improvement of environment and use of recycling used materials in our villages with simultaneous reorienting primary education to serve the same purpose.

8. Put a ceiling on the growth of individual urban centres by banning the establishment of new industries within the city limits or in their vicinity, disperse industrial and other establishments to small towns and rural areas, and actively promote a policy of favouring the growth of small towns, medium towns and villages not only through fiscal incentives but also by improving their infrastructure and giving them better conditions for human habitation.

9. Effectively change the choice of technology in favour of labour intensive decentralised and small producing units, using local materials and local manpower and avoiding the use of techniques that lead to pollution or ecological imbalance.

10. Effectively reorient the use of science and technological for promoting smaller producing units, labour intensive in production, and dispersal of industrial and other establishments over small towns, medium towns and rural areas.

11. Include in our educational syllabuses from the lowest to the highest stages material on environment and ecology that would sharpen the awareness of environmental and ecological hazards of haphazard or private profit oriented development and produce the necessary public opinion for keeping our development path on the right lines.

12. Severely penalise vulgar and ostentatious consumption or a way of life on the part of the elite and the well-to-do requiring production that cause pollution and environmental damage and ecological imbalance.

13. Promote a nation-wide consciousness of the futility of seeking constantly rising material output and private services and shift the emphasis to a betterment in the quality of life as the goal of development and not a mere increase in the gross domestic product or an attempt to reach Western countries in levels of per capita national income

In conclusion, I would affirm that the problems of pollution, environmental hazards and ecological imbalance and the type of development these are linked which cannot be solved except by the adoption of a socio-economic approach on the lines indicated above to the development process in India. □

22DPD/78—4

Khadi and Village Industries Programme

Somdutt,
Chairman, Khadi Village Industries Commission

KHADI and Village Industries Commission was established in 1957 by the Government of India under an Act of Parliament. Its functions are generally to plan, organise and implement the programmes for the development of khadi and village industries.

There are 24 industries in the schedule of the Commission including khadi. The important among them are ; (i) Khadi-cotton, woollen and silk, (ii) processing of cereals & pulses, (iii) ghani oil, (iv) manufacture of canegur & khandsari, (v) palmgur making and other palm products, (vi) cottage match and manufacture of fireworks and agarbattis, (vii) NEO soap, (viii) Forest based industries, (ix) gobar gas, (x) village pottery, (xi) village leather, (xii) carpentry and blacksmithy, (xiii) Beekeeping etc.

KVIC is implementing its development programmes through State Khadi & V. I. Boards set up under State Acts, Institutions registered under the Societies Registration Act of 1860, Industrial Cooperatives registered under State Cooperative Acts, and individual artisans. In 1977-78 there were 20 State Statutory Boards, about 700 registered institutions and over 24,000 cooperatives in the field, which took KVIC programmes to about one lakh villages.

The Industrial Policy Statement of the Government has accorded an important place to labour intensive industries mainly represented by khadi and village industries. In the context of unemployment and underemployment situation in the country a new planning strategy has been devised for KVI sector with the twin objective of arresting the displacement of labour from the existing crafts and creation of new work opportunities in the rural areas.

Immediately, after assuming office in April 1977 the new Commission appointed two committees, one for formulating Six Year Plan (1978-1984) for khadi and village industries and the other, to examine the organisational structure to give shape to the strategy of development. These committees submitted a joint report in August 1977. They made specific recommendations regarding the nature of Government support including lines of reservation.

In May 1977 the Government sanctioned a comprehensive scheme of Interest Subsidy to KVIC for loans raised from various types of financial institutions (nationalised/cooperative banks, State Finance Corporations etc). The scheme also covers capital expenditure and working capital loans raised from the financial institutions. By 31st March 1978 KVIC had obtained a cash credit limit of Rs. 10.05 crore, from three banks (viz. State Bank of India, Allahabad Bank, Punjab National Bank) for puchase of cotton and raw wool. Under the same scheme, institutions and State Boards have approached various banks for obtaining their working capital requirements for an amount of Rs. 8 73 crore.

The Government of India released an amount of Rs. 44.65 crores for 1977-78 (including the interest subsidy and Science and Technology schemes) to various agencies. The breakup of this amount is depicted in table 1 :

In 1976-77, KVIC received Rs. 28.45 crore (including interest subsidy). Compared to that the step up in expenditure in 1977-78 was of the order of 57 per cent. This is over and above the bank finance made available under the interest subsidy scheme.

In October, 1977 the Government of India under the Ministry of Industry appointed a Working Group on Khadi and village industries under the Chairmanship of Joint Secretary of the Ministry inter-alia, to critically review the performance and recommend future strategy of development including policy support. KVIC was associated with this Working Group, which submitted its final report on 2-12-1978.

The Sixth Plan (1978-79 to 1982-83) envisages the total outlay at Rs. 1,295.66 crore with a provision of employment to 55.17 lakh persons and production level of Rs. 1,231.56 crore.

In pursuance of the Industrial Policy Statement, KVIC has taken up measures for faster development in hand-spinning, NEO & Soap, cottage match and village leather. The action plans have been formulated keeping in view the Government policies of encouraging these industries in the decentralised sector.

Table-1

(Rs. crore)

	Grant	Loan	Total
Khadi	9.00	16.20	25.20
V.I.	2.40	7.58	9.98
Interest Subsidy . .	9.47		9.47
Total	20.97	23.78	44.65

Similarly, for Uttar Pradesh, KVIC has drawnup a programme to provide work opportunities to tappers in palmgur activities who may become jobless in the wake of prohibition. With a view to reach the lowest in the community through the programmes of khadi and village industries, the commission has formulated "Antyodaya" scheme. In Rajasthan it is expected to provide employment to about 20,000 families in selected villages during 1978-79. There are special programme for the North Eastern States also. It has, therefore, set up an Office at Manipur to provide drive and direction. In order to develop the activities in these States, patterns of financial assistance have also been liberalised.

It has been experienced that various industries' artisans working in the self-employment sector can best be assisted by direct financial support depending upon their genuine requirements. KVIC has, therefore, prepared a scheme to assist the individual artisans through the implementing agencies. Instructions in this regard have already been issued and scheme is in progress

The Commission have approached the Government for effecting amendment to the KVIC Act, which seeks mixing of synthetic fibre in khadi manufacture as it aims at providing work opportunities to large number of people in the rural areas. It imposes to produce mixed fabric of comparable quality and price in the decentralised sector.

The Government has decided to set up District Industries Centres (DIC) giving drive and direction to the processes of rural industrialisation. In conformity with the policy of promoting decentralised development through labour intensive technology, KVIC constituted a "Panel for Decentralised Economy" under the Chairmanship of Shri Siddharaj Dhadha, President,

Sarva Seva Sangh. This panel constitutes representatives of Sarva Seva Sangh, KVIC, Gandhi Peace Foundation and certain voluntary agencies.

KVIC has also issued instructions that Khadi Gramodyog Bhandars may be utilised as outlets for distribution of essential commodities and other consumer goods not covered by the KVIC's Act. It has a net work of about 3,500 Bhandars, 12 emporia and about 10,000 sales points with the production centres in the length and breadth of the country and in remote areas as well. This step may enable to ensure the supplies of essential and pure commodities at reasonable rates to the lower strata of the community.

To meet the requirement of trained personnel, regional Vidyalayas have been opened in the State of Haryana, Tamil Nadu, Bihar and Uttar Pradesh.

The Finance Act 1977 provides for income tax exemption to the corporate sector for undertaking the schemes of rural development, which includes programmes for promoting social and economic welfare and upliftment of the rural people.

The production of all the varieties of khadi was 68.4 million sq. metres in 1977-78 as compared to 64.05 million sq. metres in 1976-77 registering an increase of 6 per cent in terms of quantity. In terms of value it has touched the level of Rs. 64.89 crores. There was considerable increase in sales activities. The Government of India sanctioned additional sales rebate for a period of 3 months in different spells for different varieties of khadi. The employment in khadi increased from 8.53 lakh in 1976-77 to 9.22 lakh in 1977-78, i.e. by 0.69 lakh. In village industries the production reached a level of Rs. 192.54 crore in 1977-78 from 1976-77 level of Rs. 171.73 crore i e. by 12 per cent The employment reached to 14.93 lakh persons from 11.72 lakh in 1976-77 i e. by 27 per cent. In other words, the total employment increased by 3.90 lakh whereas production by Rs. 29 67 crore. The table below furnishes the comparative progress during 1976-77, 1977-78 and targets for 1978-79.

The programme for 1978-79 inter-alia proposes attaining a production level of Rs. 314.73 crore (khadi Rs. 82.00 crore and village industries Rs. 232.73 crore) with an employment of 28.50 lakh (khadi 11.28 lakh and village industries 17.22 lakh). The Government has earmarked an allocation of Rs 65.73 crore in 1978-79 including interest subsidy.

While the total sales in khadi and village industries increased from Rs. 226.68 crores in 1976-77 to Rs. 256.81 crore in 1977-78, khadi sales alone has recorded an increase from Rs. 51.97 crore in 1976-77 to Rs. 66.52 crore in 1977-78. The break-up of khadi sales shows that there is an increase in cotton khadi from Rs. 34.54 crore in 1976-77 to Rs. 45.58 crore in 1977-78, woollen khadi from Rs. 12.77 crores in 1976-77 to Rs. 14.37 crore in 1977-78 and silk khadi from Rs. 4.6 crore to Rs. 6.57 crore.

In village industries also, there is a rising trend in sales activities. It registered a rise from Rs 174.71 crore in 1976-77 to Rs. 19.30 crore in 1977-78 Target of sales in khadi and village industries of 1978-79 are Rs 82 00 crore and Rs. 232.73 crore respectively. □

Table

Item	1966-77 (Actual)	1977-78 (Actual)	1978-79 (Targets) R.E.
I. Khadi			
A. Additional Outlay (Rs. crores) Government releases	15 06	25 20	57.60
B. Production :			
(i) Qty. (lakhs. sq. metres) . .	644 74	684 12	850.00
(ii) Value (Rs. crores) .	56 03	64.89	82.00
C. Employment (lakh persons) . . .	8 53	9 22	11 28
II. Village Industries			
A. Addtional Outlay (Rs. crores) Government releases	6 13	9 28	36.07
B. Production (Value Rs. crores)	171 73	192 73	232.73
C. Employment (lakhs persons)	11.72	14.93	17.22

A Case Study:

Agriculture Labour Utilisation

S. S. Chakravarti

Institute of Regional Analysis
Bhopal

THE PHENOMENON of unemployment and underemployment among rural labour in an underdeveloped economy is caused by the scarcity of non-labour resources, land and capital in relation to rural labour force. In an undeveloped economy, with large agricultural population, land and capital are too inadequate, at least at the present level of agricultural practices and rural based economic activities, to generate enough employment opportunities so as to absorb the entire rural labour force. Consequently a significant part of the total labour force remains either unemployed or underemployed. This constitutes a reserve of unutilized human resources, which if properly utilised can greatly contribute to development of rural areas as also to improvement of socio-economic conditions of rural masses. Identification and measurement of such idle rural manpower are pre-requisite for envolving and adopting a more pragmatic approach to the problem.

Despite a good many efforts both at official and non-official levels to evolve Standard Concepts and methods more relevant for the measurement of nature and extent of unemployment and underemployment in the context of Indian rural scene, there are still serious

doubts with regard to relevance of prevalent concepts,, methodology.

The problem of idle labour in agriculture is in the form of two major elements :

(i) Seasonal Labour surplus which is peculiar to agricultural production, since agriculture itself is a seasonal industry, and

(ii) Labour surplus when the supply of agricultural labour exceeds the demand for various agricultural operations under the existing method of cultivation.

Underemployment among workers is agriculture is the result of the above situation which exists in the farming sector. But how it should be measured and what should be the requirement of labour for particular agricultural operation, are controversial issues in the developing economics.

To estimate the surplus agricultural labour force in Fingeshwar, one of the Community Development Blocks of Bindranawagarh Tehsil in Madhya Pradesh, the author conducted a study. The study is based on data relating to land utilisation, cropping pattern, size of land holdings, occupational pattern etc collected from revenue officials, block officials and Census reports. Its area according to 1971 Census is 68.4 thousand hectares with 85 4 thousand population. Out of the total population 46.2 per cent workers and of the workers 92.5 per cent are classified as cultivators and agricultural labourers. Agriculture is thus the basic and major source of employment in the area. There is considerable scope for the development of Agri-forest based industries

While the efficacy of all these measures to tackle the problem of surplus agricultural labour force cannot be denied, the development of village industries needs our immediate attention.

The village industries can only solve the problem of the people engaged in agriculture. While planning for industries we have to consider three main points viz , (a) the location of industries, (b) the type of indu tries, (c) the scale of production

Regarding the location of industries it is necessary that it is identified on a scientific manner. For this the following main points should be taken into consideration : (a) Land Utilisation pattern. (b) Cropping pattern, (c) Marketable surplus of food/nonfood crops. (d) Hinterland area of the identified locations, (e) Maximum travel distance of each settlement under the complementary region of the identified location, (f) Transportation routes. (g) Type of workers available skilled/unskillled, (h) Number of days and period for which the workers can be available as per 'Agricultural Employment Calender'.

Regarding the type of industries, all agri-forest based industries which receive their raw materials from forest/agriculture may profitably be located in this block. Oil expellers, rice haulars and small rice mills, food processing, furniture making, agricultural tools, bidi making industries are some of the type which can be developed in this area. Besides this, soap making, leather tanning and shoe making cottage industries can also be gradually developed. Since raw materials are available in this block for all the above mentioned industries, it is necessary that proper immediate action should be taken up to establlish these industries

The scale of production has to be restricted to create employment opportunity Small scale household industries with low capital intensity should be developed It is so because smaller the scale of production, greater will be the employment.

The author has done a micro-study of Fingeshwar Block in context of the pattern of surplus labour, its periodic availability and has put forth the strong case for befitting and suitable village industries after investigating the available local raw materials etc. One cannot remain but recollect recent emphasis on the significance of village mustries as a panacea to the surplus labour problem in villages Researches of the micro-level can further recommend how and what village industries can be established in Fingeshwar Block

Demand and Supply of Labour Force

The nature and volume of underemployment in agriculture generally depends on the total supply of agricultural labour, size-distribution of land holdings cropping pattern and prevailing agricultural practices While the requirement of manpower in agriculture is dependent on the total cultivated area or the gross cropped area, the supply of manpower is dependant on the existing labour force and the days for which they are prepared to work.

Thus the demand for labour force in farming will be the product of the required labour input per hectare and the total area covered under different cropping season On the other hand the supply of the labour force will be the product of the total days required for agricultural operation and the population employed primarily in agriculture. Because of the time limit operations of sowing and harvesting farmers in this block remain engaged only 220 days in a year For remaining 145 days they are either free or require employment

Elemination of seasonal unemployment in agriculture is, therefore, the first problem to be solved for improving the employment conditions and the income levels of the local population. For this we have to create periodic employment opportunities in such a manner so as to absorb the surplus mandays.

The second major problem of surplus labour force arises because given the present technique and organisation, to produce the present yield the actual labour employed is much higher than what needed The object of employment policy is not only to provide full employment but to achieve full employment in such a way as to maximise their income and output and thereby increase their consumption level. The study reveals that for 220 days of agricultural operation, 330 mandays, per hectare, are required. This means that for cultivating 0 65 hectares of land one person will be engaged for 220 days If we calculate the net income from 0 65 hectare we find that one worker is getting only Rs 2 65 per day Thus per family's in come, which constitute 2 adults 3 children, per day comes to Rs 4 30 Whether this meagre earning can provide them two times of bread, when they consume 4 Kg. of rice (Rs 2 per Kg of current prices) per day? Now the question arises as to how the income can be raised from Rs 4 30 per day per family to atleast Rs 8 00 or if possible to Rs. 8 60. This can only be done by creating such a situation in which the surplus farm labour of the economy can be withdrawn without reducing its farm production, which means transfer of a pool, of labour force from the farming sector without reducing its output □

BLAZING NEW TRAIL IN EXPORT MARKETING

N. K. Bhardwaj
Executive Director
Trade Development Authority

THE TRADE Development Authority (TDA) symbolising a new concept in export marketing development, has established a bridge of business trust between the overseas buyers and competent Indian Manufacturers and exporters. Its object has been to identify viable production units, particularly in the small and medium sectors, provide meaningful assistance in the expansion of export-oriented production facilities in selected product areas ; stimulate product development and adaptation and help enhance the technological level of industrial exports.

This innovative style in export management has helped export growth of many non-traditional products. That the rate of growth of the export value of products taken up for promotion by the TDA has continuously recorded an upward trend, higher than that of other products, is convincing evidence of the helpful role played by the TDA.

TDA provides micro level, personalised services to its clients. Its role is both in the field of product and market development. (One outstanding fact is that it has brought a new style in the management of the task of export promotion). TDA is neither a manufacturer nor an exporter It is a catalyst of export promotion.

As an instrument of growth for the products of small and medium scale industries in the sphere of non-traditional exports, TDA has considerably enlarged its area of operation. Thailand, Indonesia, Singapore, Malaysia, the Philippines, Hong Kong, South Korea, Saudi Arabia, Iran, Kuwait and Iraq are the new additions to the existing targst markets comprising the US, Canada, West Europe including UK, Japan, Australia and New Zealand. The List of product groups taken up for export promotion has also been enlarged by adding tele-communication equipment, mechanical handling equipment, basketry, garden tools, garden furniture, carpeting, heating and cooling equipment, scooters and mopeds.

BROADLY speaking, TDA adopts a two-pronged approach to export promotion. The first is to identify selectively competent and viable production units with export capabilities and export conscious managements. The size of the unit is not the deciding factor It is the export-worthiness of the unit which counts for its selection for enrolment as TDA client. TDA extends its services to nearly 625 such manufacturer-exporters. Out of these more than 65 per cent are from the small scale sector.

The second is to identify the interested foreign buyers and importers. Over a period of time, TDA has been able to cultivate over 10,000 such overseas buyers and importers who made TDA as their reliable shopping guide in India. They get in touch with TDA's foreign offices, write to TDA or contact the TDA clients directly to meet their requirements. Buyers' Missions visit India, at TDA's invitation and at their own. They are introduced to reliable supply sources in this country. Mini-displays are also organised for them by TDA. During the last 18 months over 40 buyer's missions from abroad visited India at TDA's invitation. Many of these buyers visited India for the first time and placed orders for Indian goods. Orders for new products like mopeds and scooters, water pumps, oil pumps, dog chains, axel shafts, night latches, aluminium paste, rain coats, materalised for the first time with TDA's help.

THIS YEAR, TDA introduced the scheme of group membership. Its object is to extend TDA's services to small scale units handicapped by capacity constraints, locational disadvantage, organisational limitations etc , and provide encouragement to them to participate in the export efforts of the country. The small scale industries, under this scheme, can avail of TDA's services and expertise through the State Export Corporations, State Small Industries Development Corporations, and industry and trade associations. The organisations should enroll themselves as TDA clients and pay the annual fee on the basis of number of units associated with them. The trade enquiries, marketing leads and joint ventures proposals monitored by TDA would be transmitted by them to their

members and they would be able to provide them information and other inputs locally.

New Market, New Buyers

Through sustained efforts, TDA has developed new markets, new buyers and new products for exports. Similarly, it has achieved notable success in the sphere of demand creation in the target markets for the products of its clients. For this, a number of effiective techniques of export promotion have been developed and perfected. To name a few : organisation of buyer-seller meets, contact promotion programme, commercial development programme, mini displays for the client's products, participation in specialised trade fair and exhibitions, invitation to identified buyers for product exploration etc.

Buyer-Seller Meets

Buyer-Seller Meet is a technique evolved by TDA for bringing the buyers and sellers together for trade contact and promotion. Reflecting a micro approach to a macro problem of export development. This is an integrated programme which combines supply assessment in India (by identification of products on the basis of factor endowment and selection of capable manufacturers) and demand assessment abroad (through test marketing and market surveys) It finally culminates into organisation of a trade fair where the sellers meet the buyers. So far, six such Buyer-Seller Meets have been held in the UK and the US. Two Buyer-Seller Meets have been held in Europe in Cologne, West Germany and Cophenhagen, Denmark, last October

Product Development

TDA initiated schemes for upgradation of technology and processes, procurement of samples, catalogues, drawings and patterns for making counter-samples and prototypes for buyers' approval. Efforts are under way to seek recognition of Indian testing facilities for electronics in the US, Canada and Sweden Programmes have been initiated for provision of services of product technologists and designers, training of personnel in the maintenance of machinery and equipment, transfer of complete plants and machinery to India, preparation of product catalogues and organisation of fashion shows.

New Products

The list of non-traditional products with export potential has been continuosuly expanding Similarly there are products whose export demand has shown an upward trend. For instance, products such as hand gloves, locks and padlocks, garden tools, garden furniture, precision hand tools, vices, wood screws, self-tapping screws, electronic software, sports goods and woollen knit-wear have been identified for capacity creation and product development. India's traditional base of production in leather and cotton gloves and sports goods is sought to be diversified through various programmes.

Teams of product specialists, already manufacturing traditional range of products, will be taken to developed markets (in which there is a demand and expertise available) to identify new items in these fields and arrange long-term marketing tieups with producers, who will supply the technology, and the trading houses having distribution net-work.

Through sustained efforts, TDA has developed new markets, new buyers and new products for exports.

PRODUCT development and adaptation of designs to suit the demands of sophisticated consumers in western world is most crucial for increasing the per unit value realisation of export items, TDA developed a programme for providing testing facilities for hand tools and bicycles in Jullundur and Ludhiana respectively and for setting up a Testing Room and a Central Finishing Centre for handicrafts in Moradabad

Professional technical services will be provided to selected small scale units in the fields of handicrafts, hand tools and bicycles A break-through in electronic testing facilities was achieved recently when Sweden authorised the Controllerate of Inspection Electronics, Bangalore, to issue quality certification for electronic components for export from India. This institutional arrangement was made possible through the initiative and efforts of TDA It has removed one of the biggest bottleneck in boosting export of electronic components from India to Sweden. TDA also initiated action on getting the Indian electrical and electronic items approved through Underwriters Laboratory in the US and Canadian Standards Association in Canada.

A seminar for training personnel in the maintenance of machinery and equipment will be organised later this year and two Swedish experts are to visit India for this purpose. About 250 samples, catalogues and drawings were procured from abroad for preparing counter-samples and proto-types in India. Services of product technicians and designers for a number of items are in the pipeline. TDA is also building up a Library of Catalogues of leading world manufacturers and importers for guidence of its clients

With a view to enhancing confidence among foreign buyers about Indian companies, TDA entered into a specific arrangement with Dun and Breadstreet Inc., USA, for listing TDA clients free of cost. This world renowned organisation provides credit-worthy information on companies to a subscriber. Through TDA's efforts, about 500 Indian companies are at present listed with D & B. □

The Sheet Glass Industry of India.

Dr. D. K. Kulshrestha
Dept of Commerce, Hindu College, Moradabad

THE SHEET glass includes glass sheets, figured and wired glass and also covers subsequent processing of sheet glass, viz, toughened glass, laminated safety glass, mirror glass and insulite glass. The sheet glass industry being export oriented occupies a significant place in the economy of the country. About one-fifth of the total finished products of the industry are exported every year. The proportion of exports of sheet glass to total glass exports is about one-fourth.

The history of the sheet glass manufacture in India begins with the setting up of the U P Glass Works Ltd., Bahjoi (Distt Moradabad in U P) in 1928, as a pure indigenous unit But the era of its development began with the Second World War, which provided a golden opportunity for its development because of the restriction imposed on imports of sheet glass During this period another manufacturing unit was set up in U. P and protection was granted to the industry Consequently, the imports of sheet glass declined a lot and industry could develop without foreign competition The position remained unchanged till independence of the country

After independence, proper place was assigned to the industry in our successive five year plans and it could develop steadily This developing trend of the industry is depicted with the help of table below

TABLE 1

Years	Manufcturing units	Capacity in Mln Sq. Mtrs	Capacity Utilisation in Percentage	Annual rate of Growht in percentage
1950-51	3	6 10	15 0	27.0
1955-56	3	6 50(a)	58 0	16 7
1960-61	4	10 30	82 0	4.7
1965-66	6	20 13 2.56*	40 4	12.5
1971-72	6	22 00	77 3	..
1975-76	8	27 31 5 74*	82 1	5.0

(a) Estimated figure,
*Manufacture of figured and wired glass.

An analysis of the table reveals that :—

(i) The sheet glass industry of the country showed a constant progress and its installed capacity increased by more than five times within a period of 25 years from 1950-51 to 1975-76;

(ii) In India, the manufacture of figured and wired glass started in 1963 i.e. during the Third Five Year Plan ;

(iii) The number of units manufacturing sheet glass increased from 3 to 8 during this period of 25 years, out of these 5 new units, one was set up during the Second Plan, other two during the third plan period and the rest in the last decade ;

(iv) The capacity utilisation has also been showing an increasing trend, having been gone up from15 percent in 1950-51 to as high as 82.1 in 1975-76 with the exception of 1965-66, when it was only 40 4 percent. It might have been because of the China attack over India and consequent economic crisis;

(v) The annual rate of growth, which was as high as 27 percent during the first plan period decreased to 16.7 percent during the second and to only 4.7 percent during the third plan period. Later on its trend took a turn and it was 12 5 percent 1965-66.

(vi) The imports of sheet glass declined a lot and the exports, started in 1956-57, showed a constant increase, and

(vii) The manufacture of sheet glass by P P G process was introduced during the third plan period and thus the industry reached a new phase of its development.

Where does the Industry stand now ?

The sheet glass industry of the country has been maintaining the tempo of development even in the present decade There are 8 industrial units engaged in the manufacture of sheet glass with an installed capacity of 27 31 million sq mtrs. of sheet glass and 5.74 million Sq. mtrs. of figured and wired glass. (The same is dipicted in Table 2)

Besides 5 more industrial units with an installed capacity of 28 70 million square meters to manufacture sheet glass as well as figured and wired glass have also been set up recently.

The installed capacity to manufacture sheet glass in the country is only 61 75 million Square meters Really it is very low in comparision to the installed capacity of sheet glass manufacture in other countries like U S A , Europe, U K and U S S R , where the

TABLE-2

Installed Capacity of Existing Sheet Glass Units

Name of .he Industrial Unit	Installed Capacity in Mln. Sq. Mtrs.	
	Sheet Glass	Figure Wired
1. M/S. Hindustan Pilkington Glass Works Ltd., Asansol (West Bengal)	5.00	
2. M/S. Indo Asahi Glass Co. Ltd., Bhadani Nagar, (Bihar)	4.60	
3. M/S. Shree Vallabh Glass Works Ltd., Vallabh Vidhya Nagar (Guj-Gujarat)	4.80	
4. M/S. U. P. Glass Works Ltd., Bahjoi (U.P.)	1.67	
5. M/S. Saraikella Glass Works Pvt. Ltd., Kandra (Bihar)	4.32	
6 M/S. Madras Sheet Glass Works Pvt. Ltd., Tiruvottiyar (Tamilnadu)	1.92	
7. M/S. Window Glass Works Ltd., Clacutta (West Bengal)	.	
8. M/S. Triveni Sheet Glass Works Ltd., Allahabad (U.P.)	5.00	
TOTAL	27.31	

average annual installed capacity is about 300 million sq mtrs. Besides in India the sheet glass units, are only 13, scattered in the country and deprived off the advantage of localisation. The installed capacity of sheet glass manufacture in the country is not enough to meet the requirements of the ever increasing demand for sheet glass in the markets in India and abroad. All the units manufacturing sheet glass are in private sector and no effort has so far been made in the public sector in this direction.

Though the manufacture of sheet glass has gone up by more than 60 percent within a period of five years from 1971-72 to 1975-76, it is not enough to cope with the demand in India and abroad. Therefore, it should be increased by using the installed capacity of the existing units to the fullest extent and also by setting up new sheet glass manufacturing units.

Export Performance

This industry of the country has also become export oriented, having entered in the field of exports in 1956-57. Table below gives the export performance of sheet glass alongwith its percentage to total glass products :—

Problems

The sheet glass industry of India is still in tial stage and almost all of its units are work low capacity. Consequently, they are facing problems.

(i) The units, being small, are not in a to use their capacity in full. Conse they are deprived off the advantages production ;

(ii) It is a well known factor of the cost that more the quantum of prc lower will be the portaing and admir costs. The analysis of the cost glass industry in the country reveals ration of fuel consumption and over about 50 percent higher than in U. S other developing countries of the wor

(iii) Modernisation is a problem being almost all the industries in India. Ir sheet glass industry, it is much acute all these units are running in the pri tor, the enterpreneurs are not in a to modernise their machinery and duce new techniques of sheet glas

TABLE-3

Exports of Sheet Glass

(Rs in L

Year	Total Exports of Glass	Exports of Sheet Glass	Percenta Share of Glaws tc
1973-74	475.8	104.0	2
1974-75	589.1	109.4	1
1975-76	800.1	155.1	

The exports of sheet glass have gone up to more than one and a half time in 1975-76 as against the figures of 1973-74. About 1/5th of the total exports of glass are sheet glass products. There is great potential for the exports of our sheet glass, specially for figured and wired glass, in almost all the Arabian and African countries, provided we are in a position to manufacture a better quality and lower the cost of manufacture.

facture, because of the shortage o

(iv) Another serious problem being face industry is the absence of the Resea Designs Department and the conseq awareness of the Indian manufacture the new designs of sheet glass spe figures and wired glass;

(v) The Indian manufacturers do not h

per informations about the demand pattern of sheet glass in the markets abroad. Being their scale of production too small, they are not in a position to appoint representatives and to participate in the exhibitions etc.

(vi) The problem of transportation to this industry is also much acute. Since sheet glass industry is spread over throughout the country, the transportation cost comes very high. Besides, Sheet glass being very delicate, requires the most careful packing. Thus on one hand, the cost of packing and on the other unavoidable breakage in transit further increase the transportation cost; and

vii) In India figured glass is made of only 4 feet width while it is of 8 feet width in other developing countries and 12 feet width in Europe and U. S. A. Naturally it affects the demand for Indian figured sheet glass in the markets abroad.

In brief, the sheet glass industry of India is still in its infancy and requires a drastic change and stern remedial measures for its development. The Industry can only develop by combine efforts of the intrepreneurs government and the technical institutions like Central Glass and Ceramic Research Institute, Indian Standards Institute and other glass Councils. Most of the problems, being faced by this industry, shall be solved autometically, if the installed capacity of the existing units is increased and used in full, as the advantages of large scale production will definitely lower down the cost of manufacture and will extend the scope for modernisation and evolving new research and designs. There is need to pool the expertise experience and researches of different organisations connected with the industry. The formation of a Central Coordination Committee with representatives of the industrialists, government and other concerned organisations shall be of great advantage Besides, the industry should also adopt the latest management techniques to ensure its economical and efficient operation by improving the quality and quantity of sheet glass.□

National Handloom Expo'79

Tasks Ahead

S. K. Ray
Sr. Correspondent, Yojana
Calcutta

"SPINNING wheel is a handmaid of agriculture and the handloom is the nation's second lung". Symbolic are these words of Mahatma Gandhi which epitomise the role that handloom plays in our national economy. This biggest cottage industry of the country that provides livelihood to 23 million people, the largest number in a single sector next only to agriculture, and accounts for a third of the country's total production of cotton textiles and of the total cotton textile exports, offered to the public a panoramic view of the wide spectrum of its products at the National Handloom Expo'79 which opened in Calcutta on 15th February and lasted for a month.

Tastefully decorated with handloom motifs, an imposing gateway led the visitor to a spacious 3 lakh square-foot-enclosure lined with thirty pavilions and stalls which had on display all that was latest in handloom fabrics—cotton, art silk, silk and woollen. It was a riot of colours in a wide variety of designs on an equally wide range of textures, befitting the theme of the Expo : "Handloom for everyone, for every taste, at every price".

As part of its massive programme of Publicity and Consumer Information the Development Commissioner for Handlooms of the Union Ministry of Industry, in collaboration with the Government of West Bengal organised this mammoth exhibition, the first of its kind to be held in the eastern region, at which almost all the State Governments and Union Territories through their Handloom Apex Societies and Development Corporations put on show and for sale their choicest handloom products. The age-old skills in handloom weaving consummated through generations were graphically illustrated under one umbrella in the Calcutta maidan which wore a truly handloom look.

Fairs of this kind form an important plank of the handloom marketing strategy of the Ministry of Industry aimed at bringing an ever widening range of handloom fabrics within the purview of wider sections of consumers. Conversely, the fairs provide a forum for knowing at first hand the changing patterns of consumer preferences. And it is these trends in demand that serve as useful guidelines for suitably adapting future plans of production There is also an educative and informative aspect. The challenges and opportunities inherent in this industry a brought to the fore as much for the benefit of t weave as for the enlightenment of the public. So a the Government's efforts to overcome the challeng and exploit the opportunities not only to give weaver a better deal but also to ensure consum satisfaction. The first full-fledged handloom exhibi tion called the National Handloom Fair was he in Delhi in April '77 Madras was the venue the next National Handloom Expo' in December '7 January '78. Soon after, in March-April '78, t Handloom Spring Bazar was organised in Delhi. T Calcutta Fair was the latest in the series. Ag Expo '77 and the National Small Industries Fair '7 both held in Delhi also provided occasions for buil ing up the image of handloom.

Theme Pavilion

The centre of attraction in the National Handloo Expo'79 was the Theme Pavilion set up by the Dev lopment Commissioner for Handlooms which proje ed to the visitor a complete picture of the potent of the industry for unlimited growth. Placed on displ were handloom products ranging from Janata Dho and Janata Sarees, a subsidised controlled cloth mea for people of small means being too cheap for th quality and durability, to such exclusive and high expensive sarees as the Patola, Bichitrapuri a Baluchar, so flattering to the instinct of the afflue The Theme Pavilion sought to dispel the popul notion that handlooms were coarse, shrink-pro and of limited utility and assure the visitor that t versatility of textures and of designs which had be evolved could well meet the diverse needs as much a person of simple habits as of the most sophistic ed and discriminating.

Charts, maps and graphs hung around the Ther Pavilion highlighted the pivotal place that handloo has occupied in the rural economy through the ag and proclaimed the commanding position of this dustry as enunciated in the Industrial Policy Stat ment made in Lok Sabha on December 23, 1977 a in the Integrated Textile Policy announced in Parli ment on August 7, 1978 The technological adva ces in the handloom industry and the measur that are under way to ensure for handloom a pri of place in the national economy were also effective

brought to the notice of the visitor. What was of special attraction was the live demonstrations given by skilled craftsmen of the various techniques and processes of weaving, dyeing, printing and block-making. The Exports Corner with its models draped in glamorous fabrics which are in great demand in foreign countries and the Children's Corner with equally attractive models clothed in fascinating garments also proved to be big draws.

Other Pavilions

Different States brought their classic and characteristic products which have already earned a name and also newer products which have a great promise. On display were bedspread, scarves, jackets, gowns and overcoats made of Lysamphee, a glossy surfaced quilted cotton fabric with a soft feel from Manipur, Assam and Tripura; a new range of Tie and Dye sarees and dress material cotton, silk and tassar from Orissa and Andhra; lovely woollen pashmina shawls from Himachal Pradesh and Jammu & Kashmir; gorgeous kancheepuram silk sarees interwoven with golden threads and a variety of polyester blends for shirting from Tamil Nadu; carpets and tapestry made of jute yarn from Uttar Pradesh; varieties of bed materials and furnishings from Punjab and Haryana and block-print bedspread of attractive colours from Rajasthan. And West Bengal, the traditional home of exquisite textiles, needs no introduction. Fabulous Jamdani, Baluchar, Tangail, Dhaniakhali and Shantipur sarees, elegant dhoties and beautiful utility fabrics adorned their pavilion. Superb texture and flawless workmanship spoke for themselves.

Handloom Programme

To any keen observer the message of the Expo was clear—the handloom industry is a commercially viable forwardlooking industry which can stand up to and overcome the challenge of the mechanised textile industry in respect of price, durability and utility. The break-through achieved in the area of technology was explicity. As for elegance and dignity, handloom fabrics have lived upto thier age-old reputation of being something unique, unsurpassed by any products of even the most sophisticated machine. Almost all the silk fabrics in the country are woven on handloom and the most exclusive fabrics, whether cotton or silk, are handwoven and handcrafted.

Yet the handloom industry has miles to go to attain the requisite level of development and diversification and fulfil the role cast for it in the new formulation of the textile policy. It has been decided that the clothing needs of the masses will be progressively met through the development of the handloom sector along with khadi and to that end, no expansion of the weaving capacity in the organised mill and powerloom sector will be permitted and the policy of reserving certain items of cotton textiles for the handloom sector will be effectively implemented. The objective is to revamp the decadent handloom industry and exploit its full potential for generating employment in the rural areas.

To attain the objective it is imperative to implement a well-knit comprehensive package programme that will extend to all weavers every possible assistance in the use of improved techniques of weaving, printing and dyeing, supply of the necessary inputs including yarn, dyes and chemicals, and of easy credit and lastly, in marketing their products. The 25 Intensive Development Projects and the 21 Export Production Projects set up in different areas form a nucleus of a chain of growth centres all over the country. An increase in their number will certainly go a long way in increasing the out-put of the handloom sector to meet the growing internal demand and the export needs. These projects are located in areas where there are concentrations of weavers and the idea is to develop their full capacity for optimum production. Steps are being taken to increase the number of the existing Weavers Service Centres to extend complete technological support to the weavers and promote design development. The pace of dissemination of the improved techniques of weaving will be accelerated if such weavers service centres are set up in greater numbers.

A substantial expansion of credit for handloom weavers through the commercial banks and cooperative credit institutions, is another highlight of the new handloom development programme. As for yarn, the Government will ensure that the handloom sector has precedence in the allocation of yarn spun in the organised sector. Steps are under way to bring into operation new spindlage to meet the full demand of weavers for yarn. The National Textile Corporation will also give this aspect priority attention and increased availability of yarn from the public sector will help maintain reasonable prices. Special assistance is being given through the National Cooperative Development Corporation for augmenting the spinning capacity, processing facilities and marketing arrangements.

In order to pool the resources and make the best use of them, weavers are being brought more and more within the cooperative fold by strengthening the primary and the apex cooperative institutions. Cooperatives will free the weavers from the yoke of the master weavers and help them reap full value for their labour. Plans for modernisation of looms, training of weavers on improved techniques, diversification of production and extension of the network of sales outlets are other aspects of the Development programme now under implementation.

The biggest challenge facing the handloom industry today is how to achieve standardisation and ensure quality control. Marketability of any product depends on the goodwill it enjoys in the market and goodwill in its turn is dependent on the level of standardisation and quality control, the two indispensable aspects of any promotional scheme. Handlooms in general will carve out a niche in people's mind if every handloom product has a hall-mark of quality. A great deal more remains to be done to help handlooms because, in the words of Shri George Fernandes, the Union Ministry of Industry, "it is mainstay of our rural economy along with agriculture".

Planning Forums in social transformation

Dr. T. S. Venkataswami
Chief Professor of Economics
Presidency College
Madras

THE AIM of this article is primarily two-fold : to assess the working of the College Planning Forums with special reference to Tamil Nadu and to suggest some new measures to render their contribution to economic development more productive and purposeful

The Planning Commission conceived the idea of establishing Planning Forums in Universities and Colleges in 1955 while formulating the Second Five Year Plan, initiated the scheme in 1956 and transferred it to the Ministry of Education in 1968. The scheme was started with the object of fostering an awareness of the need for planned development of the nation and spreading plan consciousness among students and teachers and through them among the general public. Over the years the scope of the objectives and activities has been progressively enlarged as a result of periodic reviews of their functioning.

The general guidelines issued by the Ministry of Education, Government of India, in 1977 envisage and encompass a wide spectrum of functions for the planning forums which include :

1. promoting intellectual understanding of the plans and the plan processes by arranging discussions and debates ;
2. functioning as Information Centres and displaying the developmental activities ;
3. conducting socio-economic surveys in urban and rural areas ;
4. cooperating with other developmental youth programmes ,
5. Forging close links with the developmental machinery at district and block levels and actively participating in development projects ;
6. Providing constructive and positive suggestions for plan formulation, implementation, and evaluation.

Organisation and Funding

A Planning Forum must be registered with the State Government in order to become eligible to receive financial aid. It is operated by an Executive Committee consisting of professors and student representatives under the overall guidance of the Principal. A senior academician is to be in charge of the forum and a senior student, its secretary. At the initial stages the planning forum was, for all practical purposes, in the exclusive domain of economics and commerce students. But eventually steps had been taken to enrol students belonging to all disciplines with the view to ensure widest possible participation in the activities of the forum.

All the registered planning forums receive a basi grant of Rs. 400 per year. But about a dozen selec planning forums in the State which have exhibited kee enthusiasm, formulated and implemented significan projects, and whose performance has been of a hig order are given higher grant upto Rs. 1600 per yea The forums are also permitted and encouraged to rais local resources of their own to supplement the govern ment grant. The Union Government, in addition to suc grants, is also prepared to provide financial assistanc upto Rs. 15,000 for organising regional meetings an seminars.

Activties Undertaken

The movement, small as it was in 1956, has take big strides and struck deep roots in the colleges o Tamil Nadu over the last two decades and now almos every college has a planning forum. There are altoget her 201 college planning forums of which 62 and 13 are in Government and private colleges respectively Of these 46 are functioning in Women colleges.

The planning forums have become the intellectua catchment area of the colleges ; they have not onl opened up new frontiers of knowledge for students bu given them new avenues of service. They have brough into clear focus the importance of planned develop ment and enlightened the students and the faculty o the planning processes and strategies and their successe and shortcomings. All the planning forums hav set up permanent Plan Information Centre where plan literature and charts and poster depicting the economic and social progress o the nation are displayed. Every year they conduc debates and seminars and organize inter-collegiat essay, elocution and chart-drawing competitions o different aspects of planning. They also celebrate th 'Plan Week', arrange extension lectures by experts an undertake educational visits to plan projects.

Educational institutions have a vital role to play in the social and economic transformation of the nation. They can successfully play this role only by identifying the needs of the people and suggesting possible solutions for such pressing problems as poverty, unemployment and illiteracy. The colleges depend to a large extent on their planning forums to deal with such issues and the latter undertake socio-economic surveys for analysis and action. It must be admitted, however, that the value of such surveys varies directly with the competence, skill and sincerety with which they are conducted. One cannot expect uniformly high-quality research surveys from all colleges. There is indeed an element of truth in the charge that some or many of the surveys have turned out to be colourless, stale and ritualistic exercises But even such surveys may be

useful in the limited sense that they enable the students to learn some rudimentary research techniques and transmit the message of planning to the people of urban and rural areas surveyed. But, what is more significant is that some of the superior planning forums working under imaginative and innovative leadership have moved away from dreary and dead uniformity and broken new ground by conducting meaningful and pinpointed surveys on saving, investment and consumption patterns, changes in attitudes and cost-benefit analysis of select projects

Learning by doing

One of the objectives of the planning forums is to cooperate with other developmental youth programmes like the NSS, for they both have the same ultimate objective of national development and the youth participation therein. The planning forums and the NSS are truly complementary to each other. The National Conference of Planning Forums held in 1976 has emphasised that the planning forums must become instruments for motivating programmes of community service. A number of planning forums in Tamil Nadu have worked in close collaboration with the NSS in adopting a village and working out and executing a plan for village improvement. They have together undertaken such works as construction of roads, clearing tanks, helping build schools, conducting adult education classes and organising cultural programmes. The planning forums and the NSS do contribute a great deal towards rectifying some of the serious defects of formal education : the gap between the educated and the uneducated as regards attitudes and values is narrowed ; the dignity of labour is practised, not just preached , the uneducated are educated and, in the process, the educated too are educated. The students and teachers come into direct contact with the actual problems of the uneducated villagers for which the textbooks do not provide solutions. They understand the valuable lesson of "learning by doing".

Recently great emphasis has been laid on the need to make the educational system more purposive and relevant to the needs of the country and reorient it with rural bias, since the vast majority of the poor are found in the countryside. As a result of this thinking, community and social service has been made an integral part of the university curriculum for which separate marks are awarded. One of the benefits of the social service activities undertaken by the forums is that they are useful in evaluating the contribution made by the students to the welfare of the society.

Need for New Dimensions

While the planning forums have done commendable work towards realising some of the objectives listed in the beginning, they have not been very successful in forging close links with the developmental machinery at district and block levels and in providing positive suggestions for the plan formulation, implementation and evaluation. The work of the planning forums needs to be greatly strengthened in these areas. Various planning forums have been functioning almost in isolation with little contact and coordination with each other and with the State planning machinery at different levels No State Level Conference of the Planning Forums has been organised since 1967 although their number has steadily increased Tamil Nadu is the first State in establishing a State Planning Commission. The commission should and can provide effective and continuing leadership and coordinate and guide the activities of the planning forums along useful and productive channels. It is suggested for this purpose that the State Planning Commission may convene a State Level Conference of all the planning forums which may be attended by the representatives of the forums as well as the representatives of the district and block level development agencies The required expenditure can be met from the grant of the Central Government which is prepared to provide funds upto Rs. 15,000 for organising regional conferences. Such conferences must be held regularly once in two or three years with the following broad objectives :

1. A critical examination and evaluation of the activities so far undertaken by the planning forums ;
2. Identification of the activities, particularly pertaining to research surveys, to be undertaken by each of the planning forums in accordance with the needs of the State Planning Commission ;
3. Organisation of workshops on research techniques for the representatives of the planning forums and of the district and block developmental agencies ;
4. Exploration of the ways and means of establishing close and effective cooperation between the forums and the development agencies on a continuing basis ;
5. Avoidance of duplication of work among the various forums ,
6. Publication of a News Bulletin to serve as a medium of communication and exchange of ideas among the planning Forums.

Realisation of the above objectives is bound to instil fresh and renewed vigour and provide a feeling of genuine and purposeful participation in the adventure of the social and economic transformation of the society among the members of the planning forums and thereby make them effective instruments of the dynamics of social and economic progress. □

The planning Forums have become the intellectual catchment area of the colleges ; they have not only opened up new frontiers of knowledge for students but given them new advenues of service. They have brought into clear focus the importance of planned development and enlightened the students and the faculty on the planning processes and strategies and their successes and shortcomings.

Planning for Futureless Economy

Bipin Behari
Joint Director
Planning Commission

ALFRED MARSHALL has stated that "the economist needs imagination especially in order that he may develop his ideals. But most of all he needs caution and reserve in order that his advocacy of ideas may not outrun his grasp of the future". Professor P.R. Brahmanand is a senior economist of India who has earned kudos from different parts of the globe His latest book "*Planning For A Futureless Economy*" is however a different dessert. In this work, the author has shown plenty of imagination but the same cannot be said of caution and reserve His love for acronyms has taken better part of his judgement , the Narcisus in him has overwhelmed the Zeus

Professor P. R. Brahmanand has successfully shown that the generally accepted objectives of the planning process have failed in India Judging the performance of Indian planning on ten counts, the Professor has adduced statistical evidence to prove the futility of planing technine in solving the national problems. He has shown that the accelerated increase in growth rates and supplies of essential consumption goods, improvements in employability—state and distribution of real income, maintenance of price stability and such other objectives of planning have not been achieved in India. The Planning Commission has failed to correctly assess the quantum of unemployment and suggest remedial measures Therefore he states that " the Employment Chapter in the Draft Plan is the weakest portion of the entire Document It raises more questions than what it has solved" (page 56). Emphasis on feasibility rather than accelerated high growth-rate, adoption of labour intensive projects instead of setting up of Mahalanobisian basic industries and inbuilt inflationary potential of the order of 14 to 22 per cent per year, according to Brahmanand, contradict the objectives and claims made in the Draft Plan Empirical support for the strategy recommended for eradicating unemployment and under-employment has been very thin; in fact, all the measures contemplated by the Planning Commission, according to the author, "appeared to augment rural unemployment". Technical coefficients assumed for the econometric models based on the input-output tables for 1968-69 have been faulty ; in the note on allocation of capacity in the sugar industry which attempted an exercise in relative advantages of alternative technologies, the Commission has made "a serious error, which even elementary students in economics may not commit" (page 56). The inclusion of various industrial programmes seems inconsistent with the Commission' advocacy for labour-intensive projects. On such considerations, Professor Brahmanand thinks that the Planning Commission has ' misled the political leaders ; it has promised what it cannot accomplish. And has made the futureless promising" (page 60). In another context, he stated, "Members of the Planning Commission may come and go but since the technicians are the same, one should not be surprised if the methodology also remains the same" (page 38). Such invectives in a serious analytical study leaves the reviewer flabbergasted.

Professor Brahmanand has prescribed three important remedies for the deep-rooted Indian economic malaise. His prescriptions are : HOPERASHMI, FULLMANGAL, and extended wage-goods strategy of development. Hoperashmi stands for Halting Our Population Explosion Roughly At Seven Hundred Million and Fullmangal for Five per cent Upper Linear Limit on Money's Annual Growth Rate As per Law. Even on a superficial examination of these suggestions, one could decide for oneself whether they are worth the salt. The author thinks that the essential requirement for improving the lot of the people lies in a comprehensive population control policy decision. By 2000 AD, the Indian population is expected to reach a level of 1,000 million which would wipe out all the gains of economic progress. In order to restrict this progress of denudation, it is necessary to halt population by 1980 to 700 million limit. For this purpose, he has suggested a 15-point strategy which shows that the doctor is suffering from a disease worse than what he is attempting to cure ! This strategy involves a plan outlay of Rs. 2,000 crore per annum for the next 15 years wherein each village could have a population control clinic with facilities for abortion, supply of contraceptives, and post operative nursing facilities after spending Rs. 20,000 per annum. Every fresh couple has to be assured of guaranteed employment at a minimum income of Rs. 3,600 per year for a child, if the couple undertook not to have another child. A group of every five villages should be equipped with a hostel for maintaining old couples; property rights over land and other property; as well as promotions in the private and public sectors should according to Professor Brahmanand, be limited only to those who had only two children. To crown all these, there should be compulsory sterilisation after 1980 of every couple who has more than two children. These are the suggestions on which the Professor pins his faith and consider them practical and necessary for the success of his new development strategy. Leave aside the huge outlay for such a programme, one wonders whether Professor Brahmanand needs a greater dose of imagination, or of caution and reserve in view of what happened in our country in recent years

(Contd. on page 35)

Planning for a futureless economy : A critique of the 6th Plan and Development Strategy, *Prof. P. R. Brahmanand, Himalaya Publishing House, Bombay, November* 1978, pp xvi + 224, Price Rs. 35.00.

BOOKS

Towards rejuvenating the old Lion

Britain's Economic Problem : Too few Producers *(second edition). Robert Bacon and Walter Eltis: The Macmillan Press Ltd., London, 1978, pages XV—255 : Price not given.*

FROM ALL evidences Britain with her mixed economy and nationalised industries accounting for more than one-tenth of the national product and about one-fifth of total fixed investment has had remarkable experience in managing her manufacturing industry that accounts for about 28 per cent of gross domestic product and services for 45 per cent. The authors of this stimulating book have laboured to demonstrate that all has not been well with Britain since 1974 with overmanning and underproduction in the leading manufacturing sectors (e g. automobile industry), public services etc. These have contributed to deterioration of the British economy. The book supplies proof to their view points largely shared by many economists and policy-makers, through empirical exercises posited on economic theory.

In the first two chapters the authors are concerned with exploring and demonstrating 'where Britain went wrong' and what were her 'lost opportunities'. The burden of their argument is that British economy has become unviable due to her high non-market expenditure and low investment and the policy of spending excessively on welfare and/or defence without adequate productive investment. The shrinkage of the productive sector to a small size has been further aggravated by inflation, structural unemployment, perpetual balance payments crisis and dependence on aid. Labour oubles and the tentatives to become a multiracial society are not without their side effects. But let us admit that the British people are brave and it will be many decades before the zoomorphic transformation of lion takes place into a mouse.

According to the analysis as stated in chapter 3, the undamental problem relates to the fact that since 961 Britain started to become unwittingly one of the world's high non-market expenditure and low investment economies. This conclusion was reached by the uthors evidently not by probing official statistics expressed in constant prices, excluding much of the relative price effect but by recognizing the need for treating the division of the economy into market and non-market sectors rather than in terms of public and private sectors of current parlance in most western countries and also in India. In Britain what had ctually happened was that the actual transfer of resources from the market to the non-market sector became very heavy during the last two decades.

The 'First steps towards a solution', as given in chapter five, to the above problems, according to the authors, lie in the direction of vigorously pursuing the strategy of exported growth followed by the use of oil revenues to finance industrialisation. We may recall here that with her abundant resources of coal and the discovery and exploitation of oil and gas in the British sector of the continental shelf under the North Sea, Britain is expected to become, on authoritative forecasts, self-sufficient in energy in 1980 with substantial reduction in oil imports and balance of payment difficulties. The present level of exports of goods and services representing about 30 per cent of GDP offers scope for a leap forward with the assistance of India.

The last two chapters are taken up with an analysis of similar besetting economic problems faced by Canada and USA and also a statement of the underlying economic theory, highlighting the implications for inflation, employment and growth of a fall in the share of output that is marketed. These two analyses are of exceptional merit based on empirical exercises of a high quality. The presentation of the propositions by the authors is clear, straight forward and intensely thought provoking in the field of economic analysis. The last portion giving statistical background and the derivation of charts supplies valuable insights to the profession as it tackles the area of definitions as well Needless to state, the contents of the book will be appreciated by all those concerned with similar endeavours in India, both in Government and the public, for a more realistic assessment of our economic policies in 1980's.

B. N. Nair

Planning

Planning For Weaker Sections *by Prof. Madhukar V. Namjoshi and Dr. Madhusudan D. Sathe, published by Centre of Studies in Social Sciences, Pune; Pages 275 ; price Rs. 55.*

THE BOOK has made a timely appearance when India's planning effort is taking a leap forward to reach the grassroot level. It aims at highlighting two aspects of planning (a) planning from below, and (b) planning for weaker sections. As a case-study of planning at Pune district in Maharashtra, it presents an analysis of the dynamics of population growth, land-use, investment potentialities in the different sub-regions of the district. Each sub-region has its unique problems and the policies and priorities vary accordingly.

The study attempts to give a new direction to the efforts aimed at solving problems of social equity but the streaks of imperfection and unrealism are obvious at places. It envisages drastic changes in the prevailing institutional structure in Pune district but it might take ages to come. Our planning cannot afford to wait that long. It has to start playing its role within the existing institutional structure. The authors opine that a master-plan for minor irrigation needs to be prepared at the district level so that local politics at the village level is ruled out. This seems to be an optimistic view because vested interests can operate even at the district level.

Neela Sengupta

Management

"Managerial Economics" *by R. L. Varshney and K. L. Maheshwari. Published by Sultan Chand and Sons New Delhi. Page 425; Price Rs. 17.*

PROMOTING A deeper understanding of the functioning of our economic system and operation of economic laws is an aspect of management development that is increasingly being recognised. Training courses designed to foster management development and especially aimed at functioning personnel seek to equip them with the knowledge of application of economic concepts but limited to specific decision-making situations. In the context of increasing professionalisation of management, there is growing and urgent need for an integrated and inter-disciplinary approach in management education. Present publication fulfils an important need in this direction, providing both to the students and practitioners, a compendium of useful concepts and techniques.

This is a revised and enlarged edition of the earlier book on Managerial Economics. Considerable additional material has been incorporated in this edition and unlike most earlier publications which are heavily drawn on western experience, the present one includes many cases and problem areas illustrative of the indian situation. The book is divided into 37 chapters spread over eight sections, in addtion a number of Appendices with review questions and practical problems with their solutions.

The scope of managerial economics, for which no standard pattern seems to exist, has been described by the authors as relating to demand analysis and forecast- cost and production analysis, pricing decisions policies and practices, profit and capital management. In the treatment of these topics, the authors with their long experience at Lucknow University have succeeded in presenting a judicious combination of theoretical and operational aspects. The pricing problem, seems to have caught their special fancy in so far as seven chapters have been devoted to this topic alone. Profit and capital management, an area which attracts managers like fish to water have however been relegated to a secondary place in the scheme of the book. This is not to say that some very interesting examples of a popular tool like the break-even analysis has not been discussed to interest the beginner and the more advanced alike. Economic and accounting concepts for management decisions have been carefully analysed and discussed with case situations from Indian industry. Tariff Commission etc. The subtle difference to profitability of investment by the use of alternate methods have been clearly brought out. The latter discussion on linear programming methods and input and output analysis will particularly be useful in situations where optimum allocation of resources is called for.

The authors have spared no pains to present a wide array of concepts and cases. Even so, the volume could do with some further effort at concise narration, if only to improve the readability and make it less manual like. The elaborate examples and problem situations clouding the main argument could have been shifted to suitable appendices or supplementary chapters. Students concerned with public investment decisions, would note the lack of reference to useful decision [illegible] the sensitivity analysis in considerations of pro[illegible] and external economies. The section on Macro economics has left out important problems like social accounting and income distribution which increasingly figure in public investment decisions. These apart, the present publication is a distinct improvement over earlier similar ones and caters to students and trainers alike.

K. S. V. Sanjeeva Rao

Rural Developments

"Situation of Agriculture, Food and Nutrition in Rural India" *by Ali Mohammad—Concept Publishing Company New Delhi, Price Rs. 50.*

THE BOOK deals with the problems of agriculture, food and nutritional status in rural areas of Uttar Pradesh one of the most densely populated states in India The study establishes that Eastern U.P. has got favourable natural conditions for growing two to three crops a year. Farming conditions are also satisfactory but water supply is very much uncertain. In comparison to easten U P , irrigation facilities and per head share of cultivable land is more in Western U P. The author has also observed that in the field of technological inputs such as tractors, fertilisers, pumping sets, high yielding varieties of seed etc , more progress has been made resulting in regional disparities in the field of yield in food grains.

Field surveys have also been undertaken to analyse the level of nutrition and carrying capacity of agricultural land under the existing level of exploitation of land resources for food production.

The result of the survey undertaken indicates that most of the calorie intake comes from cereal and sugar rather than from foods rich in other nutrients such as proteins, fats, vitamin-A, vitamin of B Group, iron etc. thereby showing that the existing cropping pattern is responsible for mal-nourishment in the rural areas of the State. The study also proves that dietary deficiencies are not only quantitative but qualitative in character. The survey was undertaken on the consumption of food at household level as well as per head per day level.

The author has rightly employed the "Weighment method" in his study of Diet Survey considering the un-suitability of the "Food Balance Sheet" method which has got its own limitations of utility and reliance.

The results of the Dietary Survey identifying different deficiency diseases, appear to be based on mere physical exminations. Clinical investigations have perhaps not been under taken in this context Therefore, any findings based on the aspect of investigation are liable to suffer from certain limitations.

There are six chapters in the book. Chapter-1 discusses the nature of food problem in general, significance of the study etc. Chapter-2 deals with the sources of variations in agricultural productivity such as soil rating, variation of rainfalls and other geographical background and also the effect of different technological advancement on agricultural productivity such as effect of tractors, fertilizers, high yielding variety

seeds, pumping sets and irrigation. The author has shown that intensified progress has been made in Western U.P. while Eastern U.P. remained neglected.

In Chapter-3, the levels and growth of agricultural productivity for whole of Utter Pradesh at district level has been analysed. The author has shown as to how increase in total production is related to increase in area, and in changing cropping pattern etc.

Growth of population has been compared with growth of food grains production in Chapter-4 to know whether food grain production was higher than population growth. To conduct village level study, a few villages for the central U.P. were taken to find out the actual picture of the problem.

Field enquiries relating to land utilisation and pre sure of population at village level were made and ana lysed in Chapter-5. Study was undertaken to assess (1) the nutritional status of the village people, (2 agricultural development of the villages. The field wor also includes a study undertaken to find out the nutr ent available per day, per head and the nature of defi ciency diseases prevailing in the area of study.

In Chapter-6, the author has drawn the conclusion and offered suggestions.

The book will be useful for policy makers, planners and the Government officials concerned with the integ rated development of rural areas.

S. Chakrabarty

Village Labour

Village Society And Labour Use
By Biplap Das Gupta and Others,
Oxford University Press, Delhi.
P. 229+vi—Price Rs. 40

THE GROWTH potential of each region should be fully developed, but the precise manner in which this goal is achieved and the stages of growth will not be identical. Some regional factors, such as those connected with physical freatures and geographical location cannot be easily altered, but there are others which can be influenced by raising level of education and skill. It is this aspect which makes the study of labour use in a village society of some importance. The author has done well in drawing attention to those aspects of village labour force which need much greater attention in any programme of creating employment potential.

The study is based on 2.000 village studies assembled by the village studies programme at the Institute of Development Studies, Brighton. The main draw back of the data is that it relates to early 1960s. The last ten years have seen good change in village economy particularly with the introduction of high yielding varieties. Secondly with the development of communication, the village today is not such a closed economy as it used to be.

The study is divided into five chapters. The first chapter gives the general idea about the scope of the study, data used for the study and the results arrived at. The second chapter surveys the literature on participation, duration and various alternative uses of labour and also indicates the relationship revealed by correlation matrix. Particular importance has been given to examine the factors which determine specialisation of job and a participation of intermittant worker in work. The third chapter deals with the list of labour utilisation and environmental variables, the statistical techniques employed in quantitative analysis and other methodological issues. The fourth chapter has been devoted to subject the data to principal-component analysis based on various sets of labour utilisation variables corresponding to participation, self-employed agriculturist and non-agriculturist variables. Thes classifications are then tested by discriminant analysi based on a set of environmental variable. In the fina chapter, a typology has been developed of villag socio-economic system based on 14 key variables whe two contrasting village types A and B exhibit interest ing differences in terms of labour utilisation charac teristics and discusses the major implications of thi typology.

The author has laboured to come to the conclusio that there is close correspondence between the demo graphic and ecological characteristics of a village an its labour utilisation pattern. With a grasp of abov characteristics, it is possible to work out a typolog of village job situation based on various alternativ uses of village labour force such as work on the famil form, hired agriculture work, non-farm activities, job outside the village and leisure. The above factors con firm a typology of village based on ecological an environmental characteristics.

The study gives valuable insight into the villag labour force. It is well known that Indian villag male workers put more hours of work on farm tha women. In African village economy, the case is op posite. In Africa, women are more actively involve in agricultural production. In Asia, their degree o involvement is usually relatively low. The overall tim spent by male labour in farm and non-farm work o various types covers barely half of a standard workin day of eight hours in the case of Africa and abou two-third of such day in Asia. The female worker in Africa are much more hard-working and they cove the gap left by male worker by their own hard work.

One major drawback in Asia is that illness make a heavy demand on an average person's time. Thi is mainly due to neglect of village economy from th point of view of medical care. Most of the medica care is confined to cities and a villager is forced t shift to the city only in acute conditions. It brings u to the point that to improve agriculture production it is essential to establish medical facilities in th village. But precaution is better than cure and muc can be achieved by improving sanitary conditions o the village.

The study also throws light on the land distribution aspect. It is said that participation is consistantly higher in self-employed village as opposed to hired agriculture labour. This brings us to land reforms. The neglect of land reforms had effected adversely the participation ratio and to improve employment potential it is essential to give utmost emphasis to land reforms. Without land reform it is difficult to create more employment opportunities in the agriculture sector.

Further the present education is also defective as the educated villagers do not want to stay in villages. They usually migrate to cities or the educated villagers prefer to employ hired labour on the farm rather than to take up the work himself. The result is that educationally advanced and more accessible and commercialised villages have low ratio, of participation. Our education system does not impart the dignity of labour. It rather creates a sort of hatred for the physical labour, and makes educated villager unfit for the farm work. This calls for an urgent need to change the education system.

Even with the higher productivity resulting from irrigation facilities and multiple cropping, participation of family labour has gone down. But the demand for hired labour goes up. Thus, overall participation ratio does not improve. At present we are faced with the problem of migration of the villagers to the city in search of livelihood. We are told that the land shortage, low fertility of land, skewed distribution of land and a higher proportion of landless agriculturist are responsible for this phenomena. There again the remedy lies in land reforms. A hired agriculturist hardly thinks of improving the fertility of land.

No doubt the improvement in technology has increased the demand for labour as new varieties have encouraged a shift in the cropping pattern from low labour intensive crops e.g. barley and gram to high labour intensive crops e.g. rice and wheat. But it has also caused a significant increase in the supply of labour partly through the process of polarisation of the poor peasantry and large scale migration of agricultural labourers from other areas. The study concludes that the "increased labour demand should not be equated with demand for more workers; empirical evidence suggests a decline with the introduction of the new technology in the overall participation rate, especially for intermittant worker." In the case of Kota, Rajasthan, there was 75.6 per cent decline in the female participation rate within five years of the introduction of high yielding varieties.

The village economy was considered to be simple at one time. Now it is becoming more and more complex as the introduction of mechanisation in agricultural sector has widened the scope for non-agricultural employment in the village. There are shops which sell fertilizers and other commercial inputs and trade in surplus food-production. Repair workshops are mushrooming in areas known for large scale application of farm machinery. Any new plan for the creation of raw jobs must take into account the factors brought out by this study The author has done a good service by providing an analysis of labour use structure and this study is of considerable use.

Rabindra Nath

(*Continued from page* 30)

Planing for Futureless Economy

Fullmangal is a policy measure as a result of which Professor Brahmanand hopes to control inflationary pressure in the economy Under this proposal wishes to "regulate the growth of money supply at about the same average at which output and supply of wage-goods are growing". (page 176). The recommendations made under Fulmangal stipulated that the rate of growth of the proportion of money used as liquid-money would be limited by l aw to 5 per cent. Under conditions of fluctuating rates of growth of the economy because of uncertainties beyond human and institutional controls, the restricted elasticity of the money supply may even paralyse the economy. It is already known that the Reserve Bank as well as other financial institutions have to devote considerable time evolving suitable rules to meet the seasonal, regional and sectoral requirements of liquid money, yet it has been difficult to satisfy all the concerned. A general fiat will not only be unpractical, it would also fail to meet the need of the economy.

The alternative strategy of Professor suggested under the extended wage-goods approach rests on programming their growth "at a substantially higher rate than population to absorb openly disguisedly unemployed into the production process". (page 176). The author has been working on it since 1956. But details of the approach either with regard to the identification of the items to be included in this category, or of the supporting policy measures have not so far been concreatised. Author's attempt to indicate the differences of his strategy with that of the Revised Minimum Needs Programme included in the Draft Plan could have highlighted its special features. But he has not done so. On the other hand, the suggestion that the outlays on defence, law and order, tax collection, and on political and administrative procedures are non-productive and non-basic which should be eliminated (or greatly reduced) to make the extended wage-goods strategy a success should be taken with much caution. A precondition for its success is a high level of "moral and ethical code in society, the convention of discipline and norms in functioning of the political process (page 185). Such an ideal condition may have existed only in the state prior to man committing the Original Sin. Assumptions relating to human nature have radically altered now. The pre-conditions of the extended wage-goods strategy suggested by Professor Brahmanand are not only nebulous, but too idealistic.

Having completed reading the book several times, the reviewer has been baffled by the prognosis of the author. In spite of several brilliant flashes of technical analysis, the author seems to be lost in the world of fantasy, romanticism and is concerted soliloques. When the reviewer comes to the end, he wonders as to the reason for such a great hurry in bringing out such a highly undigested and amateurish study from such a profound economist ! ☐

Development Notes

HMT (I)'s big breakthrough

HMT INTERNATIONAL (I) a subsidiary of the Hindustan Machine Tools Ltd. to handle the exports of HMT products and services, has netted in Rs. 8 crore the year against a mere Rs. 2.5 crores two years ago.

A Rs. 1.8 crore contract for providing technical services to a factory in Beghdad is the latest deal.

HMT (I)'s recent arrangement with Kenya, Algeria, Negeria, Iran, Sri Lanka and Nepal, offering a variety of project services, total nearly Rs. 80 crore.

Among the projects being set up in other countries is a Rs. 4-crore machine tools factory at Kenya, a joint venture with the Kenyan Government.

Machinery and other products are being shipped for setting up a Rs. 11-crore factory in Algeria for producing gas metres, gas regulators and water metres The contract includes the purchase of materials, supply, and erection besides the training of the personnel needed.

HMT (I) recently entered into a service contract for Rs. 0.6 crore with a state-owned Machinery Manufacturing Company in Algeria. Ten HMT experts are to be sent there to build up the productivity of this factory.

The Nigerian Govenment has signed a memorandum with HMT (I) for setting up a machine tool complex with Indian know-how. Work on the project estimated to cost Rs 52 crore is expected to start by the middle of 1979

Setting up of a polytechnic, a training centre and a common facility centre for an industrial estate in Nepal totally costing Rs 8 crore had been agreed upon.

As far as product orders are concerned, Indonesia recently placed an order for machine tools worth Rs. 3 crore. The first breakthrough in the South Korean market was made by securing an order for machine tools worth Rs 25 crore

A number of trained technicians and skilled workers are also out in several countries.

HMT (I) strength is derived from its parent company, HMT, which is one among the world's 10 largest machine tool houses The HMT's work force of 22,000 people, spread over in nine factories, has generated a vast reservoir of first hand experience in executing start to finish projects in a developing country environment

Per Capita Income Up

THE NATIONAL income registered on increase of 7.4 per cent in 1977-78 over the previous year. The net national income stood at Rs. 43395 crore as against Rs. 40395 crore in the previous year.

The per capita income during 1977-78 at 1970-71 prices, stands at Rs. 690 as against Rs 656 in 1976-77, indicating an increase of 5 2 per cent. The increase during 1977-78 is more than three times the average increase of 1 47 per cent during the last 28 years.

The remarkable increase in growth rate has been mainly due to the large increase in foodgrain production from 111.2 million tonnes in 1976-77 to 125.6 million tonnes in 1977-78. In addition to other sectors, banking and insurance registered a growth of 5.8 per cent and public administration, 5 7 per cent. □

Indian Railways Achievements

The original estimate of a surplus of Rs. 32.5 crore by the end of the financial year 1977-78 has now been revised and the new projected surplus is Rs. 89 crore. For the second year in succession of surplus of Rs 65 crore has been protected for the current financial year, once again without any increase in freight and fare.

The first double decker train in the country, raising the passenger carrying capacity from 90 to 148 in each coach, was run from Bombay to Pune on 12th April. The Railways have given concessions to the second class passengers in the form of reduced sleeper and reservation charges, reduction in surcharge on superfast trains etc. Packets of 'Janata Khana' priced at Re 1/- per packet has been arranged.

In this connection track circuiting has been completed at 70 stations by March 31, 1978 to ensure safety. Beginning with hardly 33 kms of track in 1853, the Railways have now grown into a vast and complex undertaking stretching to about 61,000 route kilometres or over a lakh track kilometres, and employing more than 17 lakh men and women. The degree of indigenisation has increased to a very great extent after Independence. In 1947, the Railways' dependence on imports was of the order of 60 per cent. Now it has been brought down to mere 7 per cent. The three production units on the railways not only achieved a greater degree of self-sufficiency, but also been exporting our equipment, as well as expertise, to several developing countries.

HOC Performs Well

Hindustan Organic Chemicals Limited, a public sector undertaking has maintained the upward trend in its production and sales records. For the first quarter ended June 1978, its gross production was over 17,000 tonnes, registering an increase of 31 per cent over the corresponding period of the previous year (12,962 crore.

HOC also recorded an increase of nearly 14 per cent in its sales during the first quarter of the current year valued at Rs. 5.65 crore compared to its corresponding period of last year which was Rs. 4.96 crore.

In tune with its avowed policy of holding the price line, HOC will be absorbing all the additional costs in its manufacturing operations by way of increases in excise, electricity and wages thus benefitting its innumerable consumers, especially in the small scale sector.

PRINTED BY THE MANAGER, GOVT. OF INDIA PRESS, RING ROAD, NEW DELHI-110064
by the Director. Publications Division. Patiala House. New Delhi-110001.

YOJANA

Volume XXIII Number 7

16 April, 1979

26 Chaitra, 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :

AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S. K. Roy
HYDERABAD : B. N. Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai
Cover Design : P. K. Sen Gupta
Photographic Officer : K. S. Nagaraj

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 Telegraphic Address : **Yojana**, New Delhi. **Telephones : 383655, 387910, 385481 (extensions 402 and 420) Circulation** : Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs.42. Foreign Subscription : One Year—£ 2.70 or $5.00. Two Years—£ 4.50 or $9.00 Three Years—£ 6.30 or $ 12.50. Single Copy—£0.12 or $ 0.25.

Editorial

Profitability in Public Enterprises

THE PARLIAMENTARY Committee on Public Undertaking is reported to have expressed surprise at the appointment of an officer on special duty without any specific job assigned to him, resulting in an "avoidable expenditure of about Rs. 1.8 lakh". This is perhaps only a symptom of the great malady which is steadily sapping the vitality of the public enterprises, intended to assume control of the commanding heights of the economy

The total investment in various public sector undertakings makes a neat total of Rs. 15,000 crore but it has yielded a loss of 14 36 crore in 1977-78. The failure of the public enterprises, by and large, to earn profit has attracted wide attention and adverse criticism. It has been reasonably argued that better performance by them would have wiped out the huge budgetary deficit and consequent necessity for imposing the galling taxes on articles for daily consumption by the people. The public sector managers have surely failed inspite of the advantages they enjoy on several counts. On account of Government ownership and privileges accruing therefrom the public sectors can raise funds more easily than their counter-parts in the private sectors. Some of them have a monopolistic position with a captive market for the goods manufactured by them. In a way they have greater freedom to expand, diversify, modernise and innovate Yet the public enterprises failed to play the expected role of providers of resources and goods badly needed by the economy. As catalytic agents for the transformation of our aspirations for economic development, they could not reach the level expected although their contribution to make the country the tenth leading industrial nation can hardly be overestimated.

The blame naturally is laid on the shoulders of the public sector managers They have bungled and blundered, scattering to the winds the advantages they possessed. In some cases their selections to the topmost positions have been questioned. For inexplicable reasons some of them opted for public sector jobs even though their pay and perquisites in private sector by far exceeded the maximum the former could afford to pay. As a rule it is now held that a public sector managers ability will be judged by his capacity to earn profit. A well-managed enterprise means a profit-making body. The compelling need of the hour is to boost the profit performance in public undertakings.

In view of this emerging situation it is time for the planners to consider whether the public sector managers should persue other socially important and desirable objectives like performance of developmental tasks and service orientation. As the economic objective will ultimately predominate, it is high time to underline that the public sector enterprises, as trading and manufacturing bodies, should not think in terms of social benefits. unless is no need to reduce the price of manufactured goods agencies warranted by the cost of production. Developmental ly desirmay be financed independently to give shape to social has to able objectives. At the same time maximum freedom in view be guaranteed to the public sector managers keeping control, the constraints of political interference, bureaucability which administrative pressures and parliamentary accounts. are alleged to have affected their style of functioning

ENERGY MANAGEMENT

TOGETHER WITH rural development and appropriate technology, energy is clearly the 'in' subject today.

In fact it is industry which, being by far the largest consumer of commercial energy, must devote the greatest attention to the energy problem and it is encouraging that the industrialists have felt the need for discussing it. The views I express however, are my personal ones and not necessarily those of the Planning Commission or the Government.

Reading the background papers, I get the impression that there is an underlying presumption that our energy problem could be solved if : firstly, we were able to choose the proper mix of coal, oil and power in developing our energy sources; secondly, we were able to plan liberally for meeting our demand and thirdly we were able to implement our projects and operate our power system more efficiently. I wish I could share this view because if it were so the task, difficult though it is, would be relatively less formidable. Learning from our past mistakes, our techniques for estimating the quality and quantum of power demand are being steadily refind, as are our models for choosing the optimal fuel mix. Although, there are a few weak spots, the expertise in the country for putting up and operating power systems is improving. If all this could solve our problems I would venture to suggest that after five or at the most ten years the energy problem would be overcome. This is not to suggest that all the useful recommendations made in the paper do not need to be vigorously implemented. Indeed they do and in the short term these must be our primary goals.

Real Problem

I would however point out that the real energy problem facing our country is not only much larger but also much more complex requiring hard decisions at both the State and Central levels, and we do not have too much time to face up to them. What they entail is a basic examination of the profile and technology of our programmes of growth in all the major sectors of the economy—agriculture, industry and transport.

Inaugural address by Shri V. G. Rajadhyaksha Member, Planning Commission at the FICCI Workshop on Energy Management, New Delhi

Let me first of all dispel the popular notion that as a country we are exceptionally well-endowed with large reserves of possible fuels. In absolute terms perhaps 'yes' but in terms of our population and its needs emphatically 'no'. Take coal, our largest fossil fuel resource. Going to lower depths and exploiting narrower seams than we have so far been doing our reserves of coal are estimated at 1,10,000 million tonnes. Even at a modest growth rate of five to six per cent if our energy policy continues unchanged, this coal will last for about 75 years. If however, we get to growth rates of 10 per cent, which many developing countries have achieved, the reserves would last for about 50 years

Another way to look at the problem is to see the difference between countries of comparable size and population and ourselves USSR has 36 times our per capita reserves of coal, USA ten times and China three times. Our present estimated oil and gas reserves are only 1/10th of the USA's, 1/26th of the USSR's and 1/7th of China's. No doubt, as exploration proceeds, we shall find more but, as of today, we have taken the only sensible decision possible, namely that our gas reserves are so precious that they will be used as a feed stock for chemical plants and not as a fuel as is the case in many parts of the world.

V. G. Rajadhyaksha

Member, Planning Commission

We have to come to terms very quickly with the fact that the per capita consumption of commercial energy mainly coal, petroleum and power is today approximately 57 times higher in the USA and 26 times higher in the USSR than in India whereas our total fossil fuel reserves, the principal source of commercial energy (excluding hydel and nuclear), are only 1/13 and 1/11 as much respectively. A second point to be borne in mind is that roughly 50 per cent of our total energy is non-commercial—dung, timebr, crop residues and so on. Our reserves of forests are fast declining with environmental consequences of which we are all aware.

Attempts to save our forests and dung by replacing them with commercial energy sources like coal and kerosene, would not only pose difficult financial, administrative and logistical problems but would bring the energy crisis even nearer. What then are the conclusions we must draw from all this? To my mind, they all point the same way—that we cannot blindly follow the developed world's model of economic growth if it also means accepting its pattern of energy demand.

There are many people who argue that by the year 2000 we shall make a breakthrough either in developing fast breeder reactors based on thorium or what, is even less likely in controlled nuclear fusion, showing us the vista of limitless energy. I am sure, we all hope that this will happen but would it be wise for us to bank on it, and given our current experience of nuclear power, are we certain that we can handle its environmental hazards? We must also remember that with our present technology, the most economic route to the production of a range of vital organic compounds such as fertilizers, drugs and pesticides are fossil fuels and we shall increasingly have to conserve our fossil fuels as raw materials for chemicals. We have already decided that after gas our next option as a feedstock for fertilizer plants will be coal and not naptha or crude oil.

Model of Economic Growth

Is the model of economic growth that we have been following so far consistent with the constraints on energy presources that loom ahead of us. The indications are precisely the reverse. Over the past 20 years the rate of consumption of commercial energy is growing twice as fast as our gross demestic product. Within the commercial energy sector the single most important sector, namely power, is growing the fastest. Whereas in 1960-61 the power input in kwh per rupee of added value was 0.13, it went up to 0.31 in 1975-76. We no doubt began with a very low base but what is alarming is that between 1970-75, the figures show that our consumption of power per unit increase of GNP was amongst the highest in the world-over twice that of countries like France Japan, U.K., Pakistan and Brazil and well above countries like Germany and the USA.

You may well ask what do all these macro statistical figures have to do with the hard matter of fact world that we are living in today? Let me give you one implication in terms we all understand namely money. During the Fourth Plan, power took about 15 per cent of the public sector outlay; in the Fifth Plan, it started of at 17 per cent and ended at 18.5 per cent and in the Draft Plan 1978—83, it has started of at 23 per cent. When you consider that the public sector investment is estimated to be about Rs. 70,000 crore at 1977-78 prices, we shall be spending proportionally nearly Rs. 3.500 crore more on power than in the Fifth Plan. This means less for other sectors, both public and private, including industries agriculture, transport and communications—in short, lower targets in these sectors and lower rates of growth. In many of our discussions of the State Plans, the disproportionately large outlay on power is a cause of concern not only to the Planning Commission but especially to State Governments who have many other equally important developmental objectives set before them but which get pre-empted by the demands of the so-called core sectors, namely power and irrigation.

Why is this happenig? There is no doubt that agriculture with the growing emphasis on rural electrification is absorbing power faster than other sectors. However, even for transport and industry, the consumption of power per unit of aded value has almost doubled in 1975-76 as compared to 1960-61. Let us take industry, the area of the most direct concern to this audience and by far the largest consumer of power. Power consumption is estimated to have risen from 0.47 kwh/unit of added value in 1960-61 to 0.84 in 1975-76. Can one argue that all that we are doing is catching up with the rest of the world? I am afraid, we have not only caught up but we are forging ahead. The power consumption per unit of added value in 1971 in India was over twice that of the U.S., France, U.K. and 70 to 80 per cent higher than in the USSR and Italy. While this is partly due to the fact that compared to these countries we may have a somewhat higher proportion of power intensive and heavy industries in the total industrial mix, there is also no doubt that in many industries like steel, paper, cement etc. our consumption of power per unit of production is higher than the rest of the world. This is due to a variety of reasons not to the least of which is slack energy management fostered by the low price of power, protected markets and so on.

I hope that these figures will highlight the vital importance of looking very closely at the energy input the way we plan our economic growth. Let me hasten to say once again that all the energy conservation measures referred to in the background paper are very important. They are clearly the first step in any energy management plan and must be pursued actively. There is however no dearth of data to suggest that energy consciousness has yet to become a part of the ethos of Indian industry regardless of the lip service we all pay to the concept. Except in a few energy intensive industries such as non-ferrous metals, caustic soda, mini-steel and alloy-steel plants, the cost of energy is sufficiently insignificant to take it out of the class of inputs which cost conscious managers really bother about.

Energy Conservation

The question we have to address ourselves to is—how does one create the requisite degree of awareness about the compelling need for energy conservation in a free society? It is clearly not practicable to achieve this purpose through regulatory or legislative measures and we are left with only economic levers. One such lever is to selectively raise energy prices to levels which begin to make a significant dent on margins. This would result in the more efficient energy users surviving and prospering while the rest will either be forced to improve or fall by the wey side. The stimulus that the OPEC price rise in 1973 gave to energy conservation and recovery measures in the world as a whole is a clear pointer to the

impact of such a measure. A second lever is to provide incentives for such capital investment as is required to encourage new ways of conserving energy—cogeneration, adoption of the total energy concepts in plant design and so on—an area in which countries like West Germany have made significant progress.

There are other equally compelling reasons why, in my view, a substantial hike in prices of fuels as a whole, especially power and coal, and to a lesser extent petroleum products is necessary. At the kind of costs required to produce them today, power and coal are heavily under-priced and as a result large subsidies are being provided by the State which in the long run are no less inflationary than higher prices, if they have to be found, as they are today, through deficit financing. Petroleum products should be priced so as to encourage their substitution by coal or renewable resources.

Inefficiency of Utilities

There is a reference in the paper to the inefficiency of utilities like State Electricity Boards and the coal producing companies. I fully endorse the view that there can be no justification for power utilities to pass on excessively high overheads and inefficiencies in power system operation and construction to the consumer. However, as in the case of fertilizer plants and several other industries where administered prices have been fixed, the general principle enunciated in the Plan of providing for all commercial activities a fair return on capital, based on reasonable norms of efficiency must also be applied to energy producers. The implementation of the Baveja Committee's report on Coal to which reference has been made in the background paper will lead to savings only when the surplus labour is absorbed, a process which is bound to take time. However, as stated earlier, even more important than the much needed resources which these prices will generate for the utility companies is the consciousness that higher energy costs they will bring about amongst consumers, especially industrial consumers, who account for the bulk of the power consumed today.

Efficiency in energy production and more attention to energy saving is however only a partial solution because there are obvious limits to the extent one can go. This brings me then to some of the more basic aspects of the structure of our economic growth. Can we proceed as we are doing or must we look at a structure which, while maintaining our basic objectives of tackling the employment problem, reducing income disparities, and increasing our self-reliance reduces our dependence on energy, especially commercial energy? For instance, can we allow our usage of middle distillates and in particular kerosene and diesel oil to grow at the same pace as in the past? Even by conservative estimates if the current trends continue, it will mean that we shall require over 90 million tonnes of crude by the year 2000 only 20 years with imports ranging from 60 to 70 million tonnes. If crude oil prices continue to rise modestly as has been predicted and exports continue to grow at six per cent per year, by the turn of the century only 20 years from now we shall be spending more than 60 per cent of our export earnings on imports of crude oil as compared to 30 per cent as at present. This is not a situation which we can look upon with equanimity especially as a steep hike in oil prices could bring on a real crisis. While my colleague, Prof. Raj Krishna has questioned the use of tractors on the grounds of labour displacement, I am no less concerned about the effects of a spread of tractorisation on fuel consumption. It is not generally realised that the work animals on the farms of India on traction alone are estimated to generate the equivalent of 40 million H.P. or 30,000 M.W. excluding their potential to generate dung based biogas and fertilizers. This is the equivalent of approximately one million tractors and the fuel bill required to operate these would be colossal. The importance of developing more efficient bullock-carts, ploughs and improved breeds of draught animals cannot thus be underestimated.

Less Energy Intensive Growth

The only conclusion we can come to is that we shall need to look much harder at less energy intensive modes of economic growth and also turn increasingly to non-commercial sources of energy as well as renewable conventional and new energy sources.

For example, we must obviously exploit our hydel resources much more fully—something we have not done adequately in the past. Hydel projects are however financially not very attractive as they have long gestation periods and are highly capital intensive. However, even assuming we do this, hydel power will at best contribute the equivalent of 135 million tonnes of coal by the turn of the century, not nearly enough to solve our problems. This leaves us only three presently known sources of energy which excluding nuclear fusion and breeder reactors can see us through. These are solar energy, biogas and other biomass conversion techniques. Wind, geothermal and tidal energy are unlikely to make a significant contribution to the total energy problem. All these sources based on our current knowledge of technological progress are more applicable to widely dispersed and small units using relatively low levels of power intensity rather than to large power intensive consumers.

The various applications of these forms of renewable energy are well known for example, cooking, pumping water, drying of grain and possibly generating small quantities of power for lighting and running light industry.

I would be pertinent to point out at this stage that there has been considerable criticism of Government's policy to decentralise industry and increase the range of products reserved for the small cottage and handloom sector. This criticism is based on the belief that although this policy may increase employment, it may also increase costs due to the loss of economies of scale. However, one major advantage of this policy which has been insufficiently recognised is the fact that this form of production is generally for more human and animal energy intensive—much less dependent on conventional commercial energy inputs and generally better suited to utilising the kind of decentralised low quality energy, that the renewable energy sources, to which I have referred, can gene-

23 D PD/78—2

rate, I would, therefore, pose the question—whether when commercial energy prices are raised to reflect their true economic costs, centralised production in many sectors, especially a wide range of mass consumer goods which relay much more on energy intensive production and transport systems, are necessarily going to be more economic. I would go even further. If simple logic shows that the energy crisis will overtake us if we do not do something drastics about bringing down the proportion of commercial energy input into our economic activity as a whole, then it must become a part of policy to make energy intensive options increasingly uneconomic. I would however not wish to be misunderstood. There are a number of activities which are essential and in which large scale energy intensive centralised units e.g., steel plants, oil refineries, cement factories etc., *do represent the optimal route from the energy* conservation point of view also and obviously 'small is beautiful' has many limits. But for each industry a thorough study is essential before we come to a decision In our 1978-83 Plan it will be observed that there is a significant gap in certain sectors between local supply and demand. A moment's examination will show that these gaps are in products which have a disproportionately large energy content, zinc, copper, aluminium, alloy steels and so on. This is not accidental.

I am not suggested for a moment that there are not immense technological and organisational problems to solve in moving to a disaggregated economy operating increasingly on renewable energy resources in which I include animal and human energy. But fortunately unlike many parts of the world, which have already got locked into highly commercial energy intensive systems, we still have technological options. We also have an unusually high incidence of sunshine, water resources, and much land on which to absorb them. There is also impressive evidence to suggest that a breakthrough in producing economically viable decentralised energy sources based on solar energy and bio-mass may be a lot nearer than say a breakthrough in fusion energy.

Time to Readjust

The time at our disposal to readjust to the realities of the energy problem is probably just enough to make this transition without getting into a crisis. We have no time to lose. Fortunately, in some sectors financial pressures are helping us along this path. Take for instance rural electrification in remote and scattered villages in States like Rajasthan and Madhya Pradesh. The true incremental commercial cost of taking power from large central power stations to remote, sparsely populated villages and maintaining these systems will probably, at a guess, be at last Re. 1.00 per unit, a price which no Government of State Electricity Board could possibly charge its consumers in such areas. Simple and sturdy solar energy or bio-gased devices while presently costly may soon prove to be a more economic option. This is one of the areas which the High-level Committee on Power will analyse in some depth.

There is also no doubt that our earlier concepts of progressively replacing firewood as a fuel in the rural areas by coal or petroleum products will need to be re-examined. There is just not enough crude oil or coal around to do so. The only practicable course is really intensive social and farm forestry, properly organised and scientifically managed. The stress on timber conservation and forestry development is not only necessary for promoting population-free energy sources but the resulting increasing forest cover may do much to bring back the ecological balance we are in danger of losing, Other options like quick growing shrubs and algae are yet to be fully developed but the prospects are promising more efficient bullock-carts, ploughs and improved much nearer than fusion.

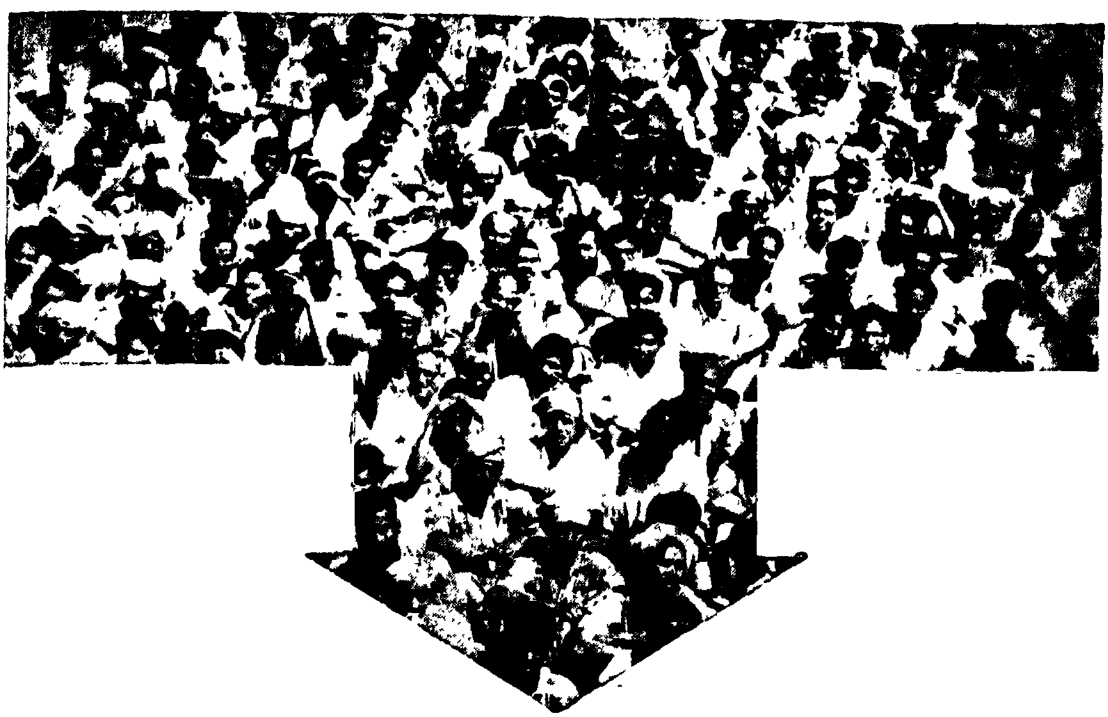
The third major benefit of this strategy would be on the environment. The frightening impact of the current pattern of industrialisation and urban development policies on the quality of life and environment of cities like Calcutta, Bombay and increasingly all the larger cities for the lower income groups in particular requires no elaboration. These cities seem to be turning into eye sores before our very eyes besides necessitating the growth of highly energy intensive infra-structural inputs. Even if the obvious degradation to which we are forcing out fellow human beings is not enough to arouse our conscience at least the energy implications of the growth of metropolitan cities could be a decisive force in making us re-think our whole approach to urban development. Should we not take positive measures, both legislative and fiscal, to stop and reverse the growth of large cities and stimulate the growth of our smaller towns which must become the focal point of our strategy of integrated rural development.

A challenge

Is all this that I have been saying a prophecy of doom and despair for the large industrial sector? On the contrary, I would say *it represents a challenge*, in meeting which, the large professionally managed organised sector has an important role to play. The major effort in energy conservation for instance will have to come from the organised sector engaged in industry and transportation because this is where the greatest scope for energy saving lies. But, in addition, the opportunities in the field of new energy sources are immense. Already some forward thinking organisations in places like Ahmedabad are showing the way. Developing the equipment and the systems for moving to a more decentralised, low energy economic system will require the best managerial, research and technological inputs the country can generate. In many cases, the technology involved in these systems is something which only organised industry may be able to do economically like solar cells, storage batteries, solar water pumps, construction materials which consume low inputs of fuel like water-proofed pressed boards, better raw materials for bio-gas plants and so on. The scope is vast and the opportunities for the exercise of ingenuity enormous.

In conclusion, let me briefly summerise what I have tried to convey. Firstly, that our fossil fuel reserves and conventional non-renewable energy sources are not sufficient to last for more than a few decades and that conservation of these resources is a matter requiring immediate national attention. Secondly, that the prospects of abundant commercial energy from sources such as breeder reactors and fusion are far from being developed and may even when developed present unacceptably high environmental hazards and costs

(Continued on page 18



Population Problem in Third World

Navin Chandra Joshi
Formerly Colombo Plan Reader
Motilal Nehru College
New Delhi

POPULATION statistics reveal that the accretion to world population growth is largely the result the high growth rate of population in the less deve- ped countries of the world. It is necessary that any velopment oriented population policy of a developing untry must relate the problem of population growth the social environmental and technological pheno- na and the changes that can easily and speedily brought about in them. This may be done in terms the country as a whole or on an inter-regional sis within the country. Any transformation in the evailing pattern on fertility depends on changing the isting values and social customs as also in fostering celerated economic, medical and educational pro- ess.

It is worth noting that today the world population s increased to more than 3.5 thousand million and having an annual growth rate of two per cent. Three urths of this population live in the underdeveloped untries where the rate of increase is twice that of e rich countries. It is estimated that by the year 00 AD there will be 4 persons living in underdeve- ped countries for every one person in the developed rld. Surely, this is going to have serious implications r the global distribution of income, utilisation of sources and economic welfare.

Changes in the population pattern within a country o do not take place merely by enforcing some techniques upon the people. Rather, a kind of holistic approach seems to be necessary for intermeshing population policy in the totality of the development plan of the country and with accent on a regional balance in economic development. It is common knowledge that in the kinds of people living in developing countries, demographic issues have not yet been integrated in their conception of life. To most of them, vitalism is dominant and life is sacred. It is not appreciated that any strategy of population policy will serve in a more effective manner only by emphasising upon the people for achieving a better quality of life. For the economic planners, an understanding of the socio-economic determinants of population trends is essential in the formulation of appropriate measures and strategies to raise the levels of living. Thus, while rapid population growth in developing countries is fundamentally brought about by the salutary effects of development on mortality and morbidity, rapid population growth itself affects the development process.

High rates of population growth may reduce the growth rate of per capita income. It may be argued that in capital abundant rich industrial countries, if the demographic increase is faster and the supply curve of labour to the manufacturing sector is more elastic, the rate of rise in productivity will be more rapid. Given the conditions of full employment, if

acute labour scarcity and increasing returns to scale are available in the manufacturing sector, provision of a high growth rate of labour supply either through immigration or through natural increases may lead to a more than proportionate rise in the growth rate of GNP. But then, in the underdeveloped countries, conditions under which this process operates just do not exist.

It is therefore critical for developing countries not only to lower the general mortality rate but also to bring down the current high level of fertility. It is wrong to think that the high level of fertility is linked to specific cultural mores and religious sensitivities and that the behaviour of the people is based on irrational considerations. This is an erroneous view because the factors that influence the behaviour patterns of people of developing countries make it eminently rational to have more children since infant mortality tends to be so high and human life at its beginning so precarious. Naturally, people are motivated to practise responsible parenthood only if there is transformation of the social and economic conditions in which they and their families have to live.

Albert Hirschman and Colin Clark, the two great demographers of the world, suggest that even in underdeveloped nations rapid population growth may stimulate economic development. Hirschman believes that population pressure on living standards leads to counter-pressure. According to him, population pressure poses a challenge to the abilities of communities and it elicits a strong response for accelerating economic development. Colin Clark opines that population growth brings economic hardship to communities living by traditional methods of agriculture. This acts powerfully enough to make these communities change their methods and ways of doing things.

In the ultimate analysis, any policy for solving the population problem must emphasise the primacy of qualitative change to be brought about in the nation's manpower. Unfortunately, however, developing countries have not recognised this crucial aspect. Demographic upsurge has a substantial impact on the demands for housing, education, employment, health and social services. Such demands cannot be met with the existing resources and priorities. We need to appreciate that population increases took place in developed countries after they had adequately developed economically. As such, increase in population facilitated their further development by providing both labour and effective demand that development required.

In the poor countries of today, apart from the absolute ever increasing growth in population, modern medicine has sharply reduced death rates. And this has happened before self-sustaining development could be initiated. In the developed countries, rapid development required labour-saving technology and therefore, inventions have been in this direction. In the poor countries, due to the abundance of labour, the use of labour-intensive technology has aggravated the problem of unemployment and under-employment. The developed countries witnessed a high rate of saving due to the frugality of their rich masses. On the contrary, in the poor countries demonstration effects emanating from the rich countries have resulted in both the capitalistic class and the labour class aspire for higher levels of consumption. This has tended to curtail drastically the savings potential for purposes of their development.

Needless to say, the unfavourable tendencies and trends in population growth need to be offset by rapid technical progress and a high rate of capital accumulation. Since there is relatively less income with an increase in the number of mouths to feed, households are induced to save less and spend a larger portion of their incomes on current consumption. Hence a rapid population growth rate will cause private savings to fall. Rapid population growth also increases domestic consumption leading to a decline in the surplus available for export while also increasing the demand for imports. The governments of underdeveloped countries will be compelled to reduce imports of capital goods and curtail their investment programmes and projects.

The contemporary theory of economic growth tells us that increases of labour and capital, unaccompanied by technical progress and improvements in economic organisations, may add to domestic product but not to productivity or to per capita income. The latter is a function of advances in technology and efficiency of the economy, both of which depend on improvements in the quality of factor inputs and not on the accretion of their quantity. Therefore, improvement in the quality of labour and economic organisations should take place through education including scientific research and technical training. And, above all, as health measures will have to increase from day to day, family planning assumes greater importance. As for India, population increases have been from 1.25 per cent in 1950-61 to 2.5 per cent in 1975. An expenditure of over Rs. 500 crore on family planning could avoid only 15 million births during the period 1951-75 while we added 14 millions a year to our population.

Demographic upsurge has substantial impact on the demands for housing, education, employment, health and social services.

In sum, it should be recognised that improvement in conditions of health and sanitation will further lower the death rate, especially the rate of infant mortality and may for a time even tend to raise the birth rate The objective of stabilising the growth of population over a reasonable period has therefore a key place in the scheme of planned development. The programme of family planning involving intensive education, provision of facilities and advice on the largest scale possible and widespread popular effort in every rural and urban community needs to be given a very high priority. In fact, controlling the rate of growth of population through wider adoption of family planning practices, can serve as an important instrument for improving the distribution of income over the long run. If the income redistributional objective of economic planning is to be achieved, it is essential that these programmes should reach as wide a section of our population as possible. □

₹ural Banking :

›ome Organisational Problems

Subhash J. Rele
Journalist

VITH THE inaguration of five regional banks on October 2, 1975, at Muradabad and Gorakhpur Uttar Pradesh, Lavan in Rajasthan, Malda in West ngal and Bhiwani in Haryana, Indian banking has tered a new era.. The concept or regional rural banks as thought of because the picture regarding the ovision of early and soft credit to small farmers was smal. Moneylenders were charging interest ranging om 30 to 50 per cent. Moreover, the small and margi ial farmers have been unable to take advantage of odern methods of cultivation due to lack of finance. he rural banks would concentrate on meeting the redit needs of not only the small marginal farmers, ut also agricultural labourers and artisans. They would ep into areas where district central cooperative banks ave proved inadequate They would get finance from ie commercial banks and engage in direct nding to farmers but not to members of cooperative ocieties, for they have to ensure that the cooperative ructure is not weakened. The Working Group on ural Banks appointed by the Government under the iairmanship of M. Narasimhan identified the various eaknesses of the cooperative credit agencies and the ommercial banks, fell that the existing institutions as iey are presently structured, would not be able to fill ie regional and functional gap in the rural credit in- itutional system within a reasonable period of time, en with such adaptation, reorganisation and restruc- uring as may be considered. The Group observed at "in a country of the size and regional diversity as urs, no single pattern, be it commercial banks or ooperative credit, can be expected to meet all the nerging requirements in all areas. A degree of adap- tion and improvisation is called for and the range of stitutional alternatives widened. It is in this context iat we have come to the conclusion that a new type institution is necessary".

Revolution in Rural Areas

The present Government aims at bringing about re- olutionary changes in the rural areas, so as to end ral poverty and unemployment. Banks have become portanf catalytic agents for promoting employment id income in the rural areas. The first and foremost ep that banks took was to make their prsence felt the rural areas by taking steps to reach banking to e doorsteps of the rural masses. As a result, there as a spectacular increase in the number of rural anches of commercial banks. This phenomenal anch expansion helped in the rapid rise in priority ctor advances, especially in the matter of advances agriculture because the branches do not generally ve much scope for giving any type of advances other an priority sector advances.

Banks have adopted an area-based-approach by lopting villages as it has been found that scattered lending makes recovery difficult. Commercial banks are providing both short-term loans and term loans. They are also giving loans to agencies for the supply of production inputs like fertilisers, loans to State Electricity Boards for financing the well energisation programme. Moreover they are financing plantation and other allied agriculture activities such as poultry, fishery, dairy and horticulture.

Very recently the importance of branch ex- pansion on systematic lines by concentrating on un- banked rural areas and by establishing at least one branch in each Community Development Block has been emphasised. Today there are over 24,000 bank branches as compared with only about 8,8000 in 1969. Of these, 8,000 are located in rural areas. Branches cost money for staff and premises and these costs must be justified by the scale of their operations in terms of advances and deposits. According to the last annual report of the Reserve Bank on Currency and Finance rural bank branches which constitute one-third of the total, had mobilised only 8 per cent of all deposits by June 1977 and had provided barely 6 per cent of the total volume of advances. It is now suggested that by the end of March 1979 the nationalised would extend one third of their advances to agriculture. small indust- ries and other neglected sectors or the economy, espe- cially in the rural areas. Banks have been also told to extend term loans to agriculture at interest in the range of 10.5 to 11 per cent.

The Dantwala Committee which was asked to "evaluate the performance of rural banks in the light of objectives for which they were set up" has come to the conclusion that regional rural banks are suited to the purpose of progressively filling up the credit gap and therefore the programme for the establishment of RRBs deserves to be accelerated. It observes that in- spite of the handicaps any innovation has to face ini- tially, within a short span of two years, "the RRBs have demonstrated their capability to serve the purpose for which they were established. They have projected their image as a new type of institution catering to the credit needs of a class of borrowers to whom institu- tional credit was hitherto not available According to the Committee the most relevant criterion for the selec- tive extension of the RRB system is the state of the cooperative credit structure at the district level. In as many as 182 districts, the DCCBs are weak. The 48 RRBs cover 55 of these districts. To start with, the Committee wants the programme of establishing new RRBs to be implemented in the remaining 127 districts. It further argues that "the superiority of the RRBs as an agency of rural credit over the rural branches of

3DPD/78—3

commercial banks is derived from its relatively lower cost of operation, its simplicity and low profile, local *participation in management*, with due safeguards against domination by vested interests, feel and familiarity of the local staff and close association of the district level agricultural and rural development agencies and personnel."

Referring to jurisdiction of the RRBs, the Committee feels that a rural bank should be confined to one district. A district is a well-established administrative entity. The identification of RRB with the local people and their problems may suffer if its jurisdiction becomes unduly large. Confining the jurisdiction to one district will also help it to remain in close contact with the development programmes of the district and with the cooperative and commercial banking institutions operating in that area. The Committee, however, suggests that since the size and the state of economic development of districts vary a great deal, it would be advisable to retain some flexibility in this and other related matters. Normally, one RRB should cover a population of 10 to 15 banks.

Another important recommendation made by the Committee relates to Control and Regulation. The scheme of RRBs is being administered at present through a variety of control mechanism. While the major responsibility of setting up a rural bank is on the sponsoring commercial bank—including the deputation of its officers to man the key posts in the RRB and providing financial support—on many crucial points such as location and licence, the decisions rest with (i) the Steering Committee appointed by the Central Government; (2) the State Government concerned and (3) the RBI. In Committee's view this "system is needlessly cumbrous". As a first step in the process of simplification, it suggests the withdrawal of the Central Government from the operational aspect of the scheme by winding up the Steering Committee. It avers that in the initial stage, since the concept of the RRB was new, a Steering Committee at the central level was necessary to ensure that the Scheme was properly understood and implemented. Now that the scheme is fully operative, there is no longer any need to retain the steering function at the Central Government's level. It further contends that such direction and guidance as the Central Government may like to provide can be done through the instrumentality of the RRB, which in any case is charged with the responsibility of overseeing the functioning of the commercial banks as well as the cooperative credit system.

Problems of Organisation

Not that RRBs do not have any problems. The main problem is one of organisation. Manpower planning, infrastructure and the like are areas of constraint. The suggestion that they should be set up in those areas where adequate infrastructural facilities exist economically sound. In areas where special agencies, namely the SFDA, MFAL and THDA (Tribal and Hill Development Agencies) have already been set up and some favourable climate created, these banks would be in a better position to start functioning. The success would depend on the personnel appointed to run them.

They would have to identify able men in the area and train them to take over responsibility of managing the banks instead of depending on the personnel from urban areas. It is, however, suggested that the training for employees, should be organised at the field level training centres of the State Governments so as to enable the staff recruited to have a deep insight into clear appreciation of the rural conditions apart from banking concepts and proceedings. As pointed out by the Estimates Committee as early as 1974, the rural branch expansion programme of banks can not be feasible without a preconceived model of a viable rural office, more decentralised power and authority, structure and viable administrative linkage of these branches with selected centres where expertise and experience are readily available. Neither the concepts of rural banking nor the concessionary rates of interest to priority sector have elements of univiability. Much of the "cost of development" emerges from the extension of urban model into the rural setting marked with avoidable expenses on staff salaries, stationery, travelling expenses and premises

Differential Rate of Interest

It is argued in some circles that credit and refinance should be made available to RRBs either by the Central banking authority or by sponsoring banks at a lower rate of interest. It is pertinent to draw the attention to the conclusions of an official study undertaken in October 1976 to review the working of 20 regional rural banks. The Study found that in the matter of deposit mobilisation, the rural banks, despite having an advantage of giving 1/2 per cent more interest rate than that offered by the other financial institutions, were not able to show more promising trend. The Study highlighted the difficulty which the RRBs face in lending to marginal farmers, small businessmen and traders, landless labourers and rural artisans. This difficulty arose due to divergence in lending rates of the RRBs, cooperatives and commercial banks. At the time of their establishment, cooperative banks' lending rates as well as those of the RRBs and those of public sector banks were presumed to remain in one alignment. It was found that at some places the rates charged by cooperative banks on their lendings were a bit lower than those charged to similar types of customers, by the RRBs. The RRBs lending would have gone up if cooperative societies working in the command area of the RRBs had been ceded to them. In reality this did not happen as the vested interests would not like to divert their hold from the cooperative societies and would not prefer to hand them over to the RRBs.

As a result of this limitation on lending, the Study pointed out that RRBs could not take advantage to multiply their credit on the basis of the deposits collected by them as well as from the sponsored banks and state authorities. The RRBs have been permitted to lend Rs. 1 crore for every Rs. 15 lakh which they raised themselves and the balance of Rs. 85 lakh of deposits came from sponsored banks and States. The view is valid that the constraints imposed on lending of the RRBs is working unfavourably on their viability. □

National Information System for planning

Dinesh Mehta
Asstt. Professor, School of Planning Ahmedabad

A NATIONAL Informatic Centre (NIC) is proposed to be set up in New Delhi to coordinate and systematize the information collected at different levels by various departments and agencies so that their effective utilization for planning and decision making can be achived. This centre is supposed to serve as a data bank and provide data processing facility for the various departments of Government of India located in New Delhi. This note is an attempt to outline certain aspects involved in design of such an information system. which need to be elaborately debated before finalisation of NIC.

The Need

The necessity for reliable and timely information for decision making becomes increasingly important as an orgnization grows. Many large scale private organizations have successfully developed business information system to plan, monitor and control their activities and have increased their profits many folds. However, for the Governmental administration, the situation is very different. The concepts of modern management information system need to be considered in an entirely different perspective as the task of the central departments are very complex. Apart from suggesting appropriate solutions to the problems in planning, monitoring, allocation, control and coordination of the departmental programmes, they have to consider the spatial distribution of these programmes. The implementation of these programmes involve a number of department, regional units and local bodies, project administration etc.,

Planning

Planning information systems and services involves, at the minimum, several major activities, identifying the information needs of the potential users of the systems. identifying or predicting the uses to which the information wil be put, and designing systems that can meet the requirements identified.

A planning information system is simply an organized flow of information from sources to users. Information systems are built for two general reasons (i) to aid decision making and (ii) to aid research. Decision making focuses on choosing optimum courses of action, research in contrast, attempts to find new insights into natural and man-made processes.

Effective approaches for planning require proper information. While information is collected by various agencies, it is in a form which can be used only after extensive manipulation. Such operations result in considerable time loss and thus declerate planning process at all levels of decision making. The proposal for a NIC is very timely. The NIC can play a vital role in implementing the multi-level planning process that had been envisaged in the first five year plan.

The volume of data collected by various organizations in our country is unbelievable. Many of the Government departments prepare various statistics which are generally sent at a higher level for collection and processing.

Data and information

Despite this, it is common of most of the research reports (and sometime Governmental reports) to mention that due to severe data limitation they had to resort to primary data colloction. This is generally the case because either the departments have not collected the right information or that the required information may be collected by some other departmental agencies about which not many are familiar.

This brings us to two aspects for discussion. First is the distinction between 'data' and 'information'; and the second is the coordination of organisation in the Governmental administration. 'Information' can be defined as data necessary for planning purposes (which will include plan formulation, implementation, monitoring and control). The rest is data which for all practical purposes are useless. So instead of collecting all the data that are possible, identification of essential information should be the first priority. In S. Chakravarty's words, "information can be collected only at a cost. Since information is widely dispersed over the economy the costs of collecting information can in some cases be so high that the value of information, net of costs can be negative".

In our context this task may not be very easy because the data collection agency (the Census or National Sample Survey) and the users are different. Attempts are made by the former to call a meeting of the users prior to the commencement of their surveys. Nevertheless, lack of information is a frequently cited problem in the Government reports. The problem is more relevant to the 'age' of the information rather than the type of information. The lag between data collection and publication of reports is so severe that in most of the cases the information is out-dated The case in point here is the agricultural census undertaken by many states every five years. In most of the states it takes more than five years to publish the report after data collection. With the dynamic nature of agricultural sector in many part of the country, it is imperative that information be made available within a year or two at the most. The advent of high speed digital computer has made this possible. In fact the general census tables for 1971 were available after just two years. It is not only important to collect the right kind of information but it is also important to make it available to users as early as possible.

Multiple Agencies

The second problem of co-ordination, of organizations in the governmental administration has often been talked about. The 'departmentalism' in public offices is so strong that it is difficult for two departments to coordinate their activities. Lack of such coordination amongst the public works department, telephones department and the electric companies is evident in our metropolitan cities; with many of the major roads perpetually in excavated conditions. This problem is compounded by the fact that agencies with overlapping jurisdictions and functions have grown like mushroom, espcially in the urban areas. The classic case is of Delhi. We have DMG, NDMC, DDA and Delhi administration of union territory. The situation is not very different in Calcutta, Bombay and Madras. The occurence of the same phenomena at the State or National level complicates the issue to the extent that it is next to impossible to be clear about role of every agency. The Governmental organisation has grown so much that Prof. Vakil asserts that nearly 60 per cent of funds allocated for rural development is used just to pay salaries to staff. With a proper information system design one can reduce the number of multiple agencies and curb the expansion of bureaucracy

NIC and Planning

The major aspect of design of Planning information system is that how far will it be able to aid the 'decentralized' planning approach advocated all along in Indian Planning. Under the existing system, information collected at vaillage level is processed at Taluka (Tehsil) level and only aggregates are sent to the district level and so on until it comes to the Centre, where the information available is in such an aggregate form that its usefulness is minimal. It is unclear at this stage regarding the 'level' of information which will be stored in the data bank of NIC. It certainly cannot be settlement level information as the storage space requirement will be preposterous. On the other hand if it plans to store the aggregate form of the information available at present to the Central Government administration, it will serve little purpose as far as plan formluations are concerned.

Planning in India has been highly centralized, despite intention of incorporating the 'Grass Roots' planning approach. Neither the formulation of the plan for implementation involves any multi-level dialog other than political pressures from all possible qua ters. Micro-level planning, area planning, block pla ning, these are the phrases currently used by poli cians, planners and the like. It is this author's conte tion that a national information system can be desig ed in a manner which will encourage micro-level pla ning and bring about co-ordination between centr and local plans on one hand and sectoral and spati planning on the other hand.

It will be essential to devise a system of inform tion flows, and delegation of responsibilities couple with suitable provisions for the financial aspects various levels. Unless the domain of decision makir powers is specified, lot of confusion, duplications ar inefficiencies will enter into the system.

With recent advance in Computer Science, an Inte grated National Planning information system in Ind does not seem far-fetched. Many firms have starte manfacturing computers of various sizes with indigen ous materials. In a few years the costs are likely t be reduced substantially. If centre, state and distric are taken as the levels of decision-making for plannin purposes, then one can visualize a system of computer at these levels. A micro processor or a mini-compute costing Rs. 20—50 thousands can be placed at a di trict level. The identified village level information ca be stored and processed for district planning.

Many of the states' statistical offices at preser have computer facility. The processed informatio from the district level as well as certain state leve information can be stored at these state computer cen tres. The Central computer at NIC will have to proces the state level information of various departments a well store national level informations. One crucial as pect of this hierarchical system will be adequate man power planning to ensure that proper personnel ar available at all levels.

To make the 'decentralized' planning a reality. NIC will have to first identify the relevant information to be collected at various level and establish a hierarchy of processing facilities at various levels so that information is made available without much delay. ☐

Handloom project gave new life

HANDLOOM industry have given hope and new life to the families of 400 weavers in the Gadag—Betageri area of Dharwal district. The families are enthusiastically looking for bright days in their lives, which they consider are not far off.

Thanks to the handloom development project and the timely initiative of Gadag branch of the State Bank of India. Over 2,000 handlooms and 1600 framed looms have been given to the weavers in the area who gave up the job years ago. Over a decade the small weavers had given up the hope of eking out a decent livelihood from their weaving profession on account of the unhelpful attitude of vested interests and the exploitation of money lenders and big weaving masters

The financial assistance from the bank and the technical guidance from the handloom development project had given the weavers, a new life. More than 4.50 lakhs worth of modern looms and yarn have been supplied to the needy weavers on credit. Each family is now able to produce 26 to 28 sarees a week and earn an income of Rs. 100 every week. They have a great relief. A job worth noted indeed.

-F.P.O. Dharwal

Employment

Wages and Workers

Sreelekha Basu
Director,
Labour and Employment, Planning Commission.

AN ATTEMPT WOULD be made in this article to study the growth of employment in the organised manufacturing industries sector and the fluctuations in the share of salaries and wages in "income originating" in this sector, as also to examine the movements in the per-worker-wages earned, in real terms. The main idea is to find out if over the last sixteen years (relevant data relating to which are readily available), the income earned by the labour in this modern industrial sector had grown as fast as its employment content, or has recorded a fall in its share. The results arrived at are of topical interest and some analysis has also been made to arrive at important indicators for the organised industrial sector.

Annual Survey of Industries

The main source of data on employment, wages, total emoluments, etc., has been the Annual Survey of Industries, (ASI), conducted by the Central Statistical Organisation, which covers the total factory sector in India. Large, medium and small registered factory units are covered by this survey. Factory units include manufacturing as well as some "servicing" units, such as distribution of electricity, water and gas, cold-storage, sanitary services, motion picture production, laundry and job-dyeing service, etc. but excludes units under the control of the Ministry of Defence, oil storage depots and technical training institutions. However, servicing industries like sanitary services, motion picture production etc., are excluded from the tabulated results in order to conform to international conventions. All units employing 50 or more workers, working with the aid of power, and 100 or more workers working without the aid of power, are completely enumerated in the "census" sector. All units in the electric light and power industry are also included in the census sector. The remaining registered factory units, i.e. units employing 10 to 49 workers, working with power, and units with 20 to 99 workers without power, are covered on a probability sampling basis. Commencing from 1966 ASI, some specified industries in the sample sector are being completely surveyed every year For example, metal and metal based industries were covered during 1966 and 1967 chemical group in 1968, textile group in 1969 and the remaining industries in 1970. Since 1973-74, the non-census sector factories are covered on a 50 per cent sample basis, so that the entire non-census sector is fully covered in a period of two years. The National Industrial Classification (NIC), 1970, was used for the first time in ASI 1973-74, for classifying the factory units, while earlier the ASI industrial classification was being utilised. Thus, industry-wise aggregates do not bear a one-to-one correspondence with earlier years' results.

ASI was started in 1959 and the latest summary results are available only upto 1975-76. There had not been any survey during 1972-73. Some provisional results for 1976-77 are also available. From 1959 to 1965, the reference period for the ASI was calendar year. Since 1966, the results are based on data collected according to the financial year, (i.e. accounting year of the factory ending between April to March, instead of January to December, as done earlier). However, the broad comparability of the aggregates studies in this article are not affected by this change over from calender to financial year reference period. The basic information is presented in Table I, where "workers" refer to all persons defined as workers under the Factories Act (1948), but excludes all other employees in supervisory, managerial and administrative work. "Total employment" included workers and all other employees engaged in supervisory, managerial, technical, administrative and sales work. "Wages" refer to all remuneration in terms of money paid to workers, more or less regularly including regular bonuses while "total emoluments" consists of salaries, wages, festival and other bonuses to all employees and imputed value of benefits given in kind, but excludes employers' contribution to P.F., Pension, Gratuity etc. Some adjustments have been made in the "total emoluments" figures for earlier years, (as these included employers' contribution figures also) on the basis of separate data available for 1965 and 1966. "Value added" provides a measures of the total contribution made by resources of labour and capital equipment in producing the output, and is obtained by deducting from total value of output, the total value of input and depreciation.

Trends in Employment Growth

The growth trends in employment, earning and total value added are shown in Table II. While total employment had gone up by 82 per cent between 1960 and 1976-77, the corresponding total emoluments went up by 159 per cent, in real terms, over the same period. On the other hand employment of "workers" recorded an increase of 61 per cent, compared to 96 per cent rise in their total wages, in real terms, over

23 DPD/78—4

TABLE I

Employment, Wages, etc, for registered manufacturing industries in India.

Year	Employment (000)		Total wages (Rs. crore)	Total emoluments (Rs. crore).	Total value added (Rs. crore)
	Workers	Total			
1	2	3	4	5	6
1959 . . .	3104	3568	342.36	427.50	892.62
1960 . . .	3x28	3644	387.95	470.42	1017.26
1961 . . .	3340	3729	436.13	525.27	1171.81
1962 . . .	3534	4017	495.33	616.80	1280.56
1963 . . .	3682	4208	543.16	695.28	1460.35
1964 . . .	3866	4521	604.10	820.45	1669.21
1965 . . .	3919	4696	679.85	955.39	1883.42
1966-67 . . .	3921	4750	744.39	1083.03	2045.05
1967-68 . . .	3884	4716	812.51	1204.17	2113.40
1968-69 . . .	3952	4825	878.58	1355.50	2304.65
1969-70 . . .	4103	5031	966.35	1478.21	2776.22
1970-71 . . .	4231	5216	1079.92	1674.34	3149.25
1971-72 . . .	4393	5436	1213.24	18884.55	3437.85
1973-74 . . .	4660	5820	1567.59	2498.74	4632.86
1974-75 . .	4762	6053	1822.96	3051.67	6081.03
1975-76 . . .	4996	6381	2146.60	3462.96	6386.68
1976-77(P) . .	5211	6649	2270 22	3636.68	7310.71

*1959 to 1964 adjusted for excluding P. F., Pension, Gratuity etc. for the sake of comparability.
(P) Provisional.
NOTE : total emoluments consists of salaries, wages, etc., to all employees.

the same period. Both "wages" and "total emoluments" have been deflated with the help of All India Industrial Workers Consumer Price Index series (with 1960 base). Thus total employment had gone up at a much slower rate than total emoluments at constant prices. Income earned by the "workers" had also increased faster than the growth of employment of workers, but at a comparatively slower rate than total emoluments. Further, employment among non-workers (white-collars, technicians and others), had recorded a faster rate of increase during the period, than among the wage earning "workers" in the factory sector.

Per Capita Annual Wages

Statistics on per capita annual wages, emoluments and value added are furnished in Table III, at current as well as at constant prices, (i.e in real terms) Corresponding growth trends are presented in Table IV At current, i e. prevailing prices, per capita average wages went up by 262 per cent during 1960 and 1976-77, while the increase had been 324 per cent and 294 per cent respectively, in per capita total emoluments and value added per person, over the same period at the prevailing prices. However, it would be interesting to find out how much of these sharp increases in these average values were due to price factor and what had been the real increase in these growth indicators. The "wages" component and "total earnings" component, have been deflated with the help of All India Industrial Workers' Consumer Price Index numbers, with 1960 as base, and the value added has been deflated by the implicit income deflator of the registered manufacturing sector from official national accounts statistics. In real terms, per worker average annual wages had gone up by only 21 per cent, during 1960 and 1976-77, while the corresponding growth in average annual emoluments for all employed persons, recorded an increase of 42 per cent, and per person (employed) value added went up by 44 per cent, during the same period, (both at comparable constant prices). Thus, though total emoluments per employee at prevailing prices has gone up by 324 per cent, (from Rs. 1290 in 1960 to Rs. 5469 in 1976-77), in real terms they have gained by 42 per cent only, as compared to 44 per cent increase in value added per employee at constant prices, (while the current price increase was 294 per cent), and only 21 per cent increase in average wages per workers, in real terms, (with current price increase of 262 per cent).

The total net domestic product in India registered an increase of 67 per cent during 1960 and 1976-77, at 1960-61 prices, and per capita income by only 18 per cent, during the same period. Compared to the average per capita income rise of 18 per cent over the period under study, the average per capita wages in the modern industrial sector went up by 21 per cent and the average earnings by 42 per cent. Though at current prices both total earnings per employee and total wages per worker in the factory sector registered sharp increasing trends, over the period under study, when deflated by the increase in their cost of living indices, the trends had been quite erratic registering sharp falls from mid-sixties, for a couple of years, and again in 1973-74 and 1974-75. Thereafter, both average wages and average earnings picked up their rising trends.

Share of Employees

The movement of the share of total emoluments, which can be taken as "compensation of employees", in the total income orginating in the registered manufacturing industries sector, over the years under study at current and at constant prices, would be an interesting study (Table V) Data on net domestic product are official estimates, which are mainly based on ASI and on Index of Industrial Production statistics, with necessary adjustments for non-responding units and for imputed bank charges, (the latter is de-

TABLE II

Indecies of Important aggregates

Year	Index of employment		Index of total	
	Workers	total	Wages	emoluments
	(1960=100)		(1960=100)	
1960	100.0	100.0	100.0	100.0
1961	103.5	102.3	108.1	107.4
1962	109.5	110.2	119.3	122.5
1963	114.1	115.5	127.3	134.4
1964	119.8	124.1	124.4	139.5
1965	121.4	128.9	127.9	148.2
1966-67	121.5	130.4	123.0	147.6
1967-68	120.3	129.4	121.1	148.0
1968-69	122.4	132.4	128.7	163.7
1969-70	127.1	138.1	140.7	177.5
1970-71	131.1	143.1	149.7	191.4
1971-72	136.1	149.2	162.0	207.6
1973-74	144.4	159.7	156.6	205.9
1974 75	147.5	166.1	152.6	210.6
1975-76	154.8	175.1	175.7	233.7
1976-77(P)	161.4	182.5	195.7	258.6

ducted from the net value added as it forms a part of the income originating in the banking and insurance sector). Some adjustments have also been made for the emoluments that had originated from Defence manufacturing establishments and the non-responding units to make this series comparable with the NDP in this sector.

At current prices, the share of employees registered some upward trend from 44 per cent in 1960-61 to 52 per cent in 1976-77, but there has been wide fluctuation in the employees' share in the net domestic product in the registered factory sector (inclusive of electricity, gas etc.), and the trend had been quite erratic Thus the highest share (about 60 per cent) was obtained during 1968-69, and during the seventies the lowest were recorded in 1974-75 as well as in 1976-77 However, the picture is not clear as similar series could not be obtained at constant prices. The erratic increase in the proportion of NDP in the modern industries sector, going to the employees perhaps was wiped off by the sharp increase in the prices, as recorded by their CPI numbers. However, the above figures on compensation did not include all benefits from free or subsidised food, fuel, accommodation, medical attention and other welfare measures specially those which could not be evaluated in terms of money These also did not include P.F., Pension, Gratuity and Social Welfare measures financed by the employers ASI may attempt to collect complete information on all expenses incurred by the factory owners for the workers and non-workers separately, so that a more meaningful analysis can be made to check which section of the employees are benefitted by these measures With only 21 per cent increase in per capita wages, in real terms, over the last sixteen years, compared to 42 per cent rise for all employees, it can be safely inferred that the lower paid "workers" fared worse than the comparatively well-off section of

TABLE III

Annual average wages earnings and value added. (at current and constant prices)

Year	Annual average wage per worker (at current Prices : Rs.)	Annual average emoluments per employee (at current prices Rs.)	Annual average value added per employee (at current prices : Rs.)	Annual average wage per worker (at 1960 Prices Rs)*	Annual average emoluments per employee (at 1960 prices : Rs.)*	Annual average value added per employee** (at 1960-61 prices : Rs)
1959	1103	1198	2507	n.a.	n.a.	n.a.
1960	1202	1290	2792	1202	1290	2792
1961	1306	1407	3142	1256	1353	3174
1962	1402	1534	3188	1310	1435	3188
1963	1475	1652	3470	1341	1502	3243
1964	1563	1815	3692	1250	1452	3387
1965	1735	2034	4011	1266	1485	3488
1966-67	1898	2280	4305	1217	1462	3312
1967-68	2092	2553	4481	1209	1476	3295
1968-69	2223	2809	4776	1263	1596	3411
1969-70	2355	2938	5518	1331	1659	3728
1970-71	2552	3210	6038	1372	1726	3871
1971-72	2762	3467	6324	1431	1796	3787
1973-74	3364	4293	7960	1304	1664	4041
1974-75	3828	5042	10046	1243	1637	3864
1975-76	4297	5427	10009	1364	1723	3721
1976-77 (P)	4357	5467	10995	1457	1829	4027

(P) Provisional.

* deflated by Industrial Worker's CPI numbers base 1960

**deflated by implicit income deflator of the registered manufacturing sector

TABLE IV

Growth rates in wages, Earnings and Value added.
(at current and constant prices)

Year	average wage per worker	average emolument per employee (at current prices)	average value added per employee	average wage per worker	average emolument per employee (at constant prices)	average value add per em loyee
1960	100.0	100.0	100.0	100.0	100 0	100.0
1961	108.7	109.2	112.5	104.5	105.0	113.7
1962	116 6	119.0	114 2	109.0	111.2	114.2
1963	122.7	128.1	124.3	111.6	116.4	116.2
1964	130.0	140 7	132.2	104.0	112.6	121.3
1965	144.3	157 7	143 7	105.3	115.1	124.9
1966-67	157.0	176.7	154 2	101 2	113.3	118.6
1967-68	174.0	197.9	160.5	100 6	114 4	118.0
1968-69	184 9	217.8	171.1	105 1	123 7	122.2
1969-70	195.9	227.8	197 6	110 7	128 6	138.5
1970-71	212.3	248.8	216 3	114.1	133.8	133 6
1971-72	229 8	268.8	226 5	119.1	139.2	135 2
1973-74	279 9	332.8	285 1	108.5	129.0	144.7
1974-75	318 5	390 9	359 8	103 4	126 9	138 4
1975-76	357 5	429.7	356 5	113.5	133.6	133.3
1976-77 (P)	362.5	424.0	393 2	121.2	141.8	144.2

(P) Provisional.

TABLE V

Year	NDP in the registered manufacturing sector (Rs. crore)*	Total compensation to employees in r.m. sector** (Rs. crore)	Share of compensation to NDP
	At current prices		
1960-61	1139	502	44.1
1961-62	1242	562	45.2
1962-63	1380	659	47.8
1963-64	1626	744	45.8
1964-65	1815	880	48.5
1965-66	1966	1028	52.3
1966-67	2157	1163	53.9
1967-68	2235	1290	57.7
1968-69	2422	1438	59.4
1969-70	2965	1599	53 9
1970-71	3263	1784	54.7
1971-72	3622	2007	55.4
1973-74	4684	2645	56 5
1974-75	6235	3211	51.5
1975-76	6597	3639	55 2
1976-77(P)	7402	3837	51 8

(P) : Provisional.

*inclusive of the same in electricity, gas and water supply to make these comparable with the total compensation statistics from ASI.

**exclusive of employers contribution to P.F., Pension, Gratuity, etc.

"non-workers" class, in this sector. However, the existing statistical information is deficient to throw any light on the distributional aspects of the earnings of the factory employees, though the basic data can be collected by the ASI, once in every five years, to examine how the additional income generated by t employees is distributed amongst them. ☐

Energy Management

(Continued from Page 8)

Thirdly, that we cannot afford to continue the ener policy that has been implicitly adopted in the p and we must move to a pattern of growth which u commercial energy less intensively. Fourthly, tl both from the point of view of generating the resour required to produce them and for creating a clim of energy conservation commercial energy prices ne to be increased. Fifthly, that we must examine m intensively the possibilities of greater utilisation non-conventional renewable energy resources and th application to the rural economy which by its dis gregated nature and the small amounts of low qual energy it needs makes it eminently suitble for absorption of such energy. Sixthly, that in India have a unique combination of an economic b which is still capable of being progressively shif to greater reliance on non-conventional and renewa energy sources the necessary natural resources a most of all a tremendous pool of scientific, techni and managerial personnel who can be harnessed this vital task. Lastly, I hope that the organised c porate sector which FICCI represents will share t concern for adopting such a policy and will use skills and resources in implementing it in a way wh will be of benefit to the country and themselves have no doubt that if we can successfully organise the resources at our command, India may eme into the 21st century as one of the few major countr which have this energy problem under control. ' may also help to solve our major and pressing pr lems of employment, income distribution and threat to the environment. ☐



Barefoot Entrepreneurship in Haryana

Vinod Srivastava
Asstt Editor (Publication)
Haryana Public Relations

A novel scheme has recently been started by the State Government of Haryana to generate employment potential in rural areas. Every large village will have a small scale industry by the end of 1984, owned collectively and run independently by the village artisans. The author narrates the scheme including the safeguards provided against the exploitation of the rich.

'ONE WORKSHOP under every roof' project has recently been started in Haryana to blow over the socio-economic crisis generated by the green revolution in the Villages of the State. The twin basic objectives of the project are to rehabilitate the rural artisans and craftsmen who were hit hard by the sweeping wave of green revolution during early seventies and provide employment to the educated youngmen of villages.

Rural Artisans' Plight

The aftermath of green revolution indeed saw drastic changes in the rural life of Haryana but it had its unpleasant aspects too. Whereas the big farmers had grown prosperous by commercialising their farming pattern with the support of Government's assistance in form of cash subsidy and incentives, the conditions of artisans substanticaly deteriorated. Furthermore, a large number of landless labourers were rendered jobless because of rapid growth of farm mechanisation. The inflow of consumer items like shoes, synthetic clothes and soaps from cities into villages had thrown a large number of cobblers, carpenters and weavers out of jobes. The present programme of rural industrialisation is expected to rehabilitate these categories of people by generating employment potential in rural areas.

Novel Scheme

Under the programme, it has been envisaged to set up 2000 small scale industrial units in the villages of the State within next five years This programme is perhaps first of its kind in the country where, instead of waiting for entrepreneurs to come from outside and set up rural industries, the State Government will help to village artisans to set up small scale industries collectively and run them independently under the guidance of Government agencies.

The programme is second largest in the State ever launched on such a massive scale since its formation,

the first being that of real electrification implemented in early seventies which succeeded in providing every village of Haryana with electric connections. It is expected that every large village of the State will have a small scale industry at the en dof 1984 and eveneually the second phase of the development of the state will completed.

Village Barefoot Entrepreneur

The most distinct feature of the formulated scheme is that it aims at picking of youngmen of skills and enterprising nature from the village areas to shape them into 'Barefoot entrepreneurs' by providing adequate training and financial assistance Under the scheme the ITI trained young boys and literate rural artisans will be financed by the State Government to start joint ventures in villages. The basic objectives of the programme are to providing self-employment opportunities to ITI trained youngmen of rural areas and modernising the traditional skills like carpentry, cobbl ng and blacksmithy.

The programme is expected to bring on one plattorm the modern technical know how and traditional skill for setting up of such rural industrial units which will produce the items of general consumption in villages like shoe, clothes, farm equipments, pottery, bullock-carts etc. Thus on one side the newly educated youngmen will get employment, the artisans will also get opportunities to take up remunerative jobs.

Successful Experiment

The State Government has been, in fact, prepairing the ground for launching such a big programme for more than one year A scheme was formulated in 1977 to set up 110 units in the rural areas on an experimental basis The scheme drew so much of popular response that the number of units set up at the end of 1977-78 reached 127 against the target of 110 thereby employing over 400 ITI trained youngmen and more than 100 skilled rural artisans besides a large number of unstilled labourers and under-matriculates.

The performance on the rural industrialisation front was so encouraging during the first few months of 1978-79 that State Government decided to further widen the scope of programme. The entire task of rural industrialisation was handed over to Haryana Small Industries and Export Corporation in order to ensure smooth implementation of the scheme. It was also decided that a target of setting up 2000 rural units in the State should be fixed up and a policy be pursued to reach a stage when every roof had a small workshop under it.

Safe-guards against Exploitation

However, it was ensured in the very beginning that the big landowners and village mahajans do not again snatch awav the benefits of the present programme The persons having ownership of more than seven acres of land have clearly been kept away from participation in the scheme

The loans for the industrial ventures are made available by the financial institutions at easy terms. Eighty per cent of the capital required for these ventures is advanced by the financial institutions. This includes capital cost for the project together with three months working capital. The state Government provides 10 percent seed money at the interest of 4 percent per annum and also subsidises the difference of 6 per cent between the actual and the effective rate of interest.

While giving loans, the government agencies also supply free feasibility report. The 'barefoot entrepreneur' is given the details about capital requirements etc. of the industry, he is interested in. The details of a few items are given in the Table below :—

Item	Total capital investment (Rs.)	Working Capital (Rs.)	Implement potential (Nos)
Shoes	2),000	25,000	10
Leather attache cases . . .	4,000	29,500	7
Carpets . .	25,000	35,000	12
Wooden Cases .	55,000	35,000	15
Agricultural Implements .	70,000	60,000	15

However, despite all the incentives and concessions, the scheme did not do well in the beginning during early last year. Even the government machinery was not very sanguine about its outcome. The scheme had also to suffer mild resistence from the big landowners because they were not allowed to participate in the scheme. But the task began and gradually attained momentum. Within a few months the people understood the importance of the programme and it got off an impressive start.

Also, in the beginning the marketing of the goods produced by village units posed a little problem but it was soon tackled. Now the consumer items are sold through co-operative stores in the rural as well as urban areas and the industrial items are supplied to state public sector undertakings.

As the things are now going on remarkably well with the scheme, it is expected that over 5000 ITI trained youngmen, 8000 artisans and over two lakh unskilled labourers will be absored within five years in the rural industries These units will not only generate a great deal of employment potential but also raise the living standard of villagers in Haryana. □

A Progressive Farmer

SHRI RAM SINGH Meena is progressive farmer of Sikandra Village Jaipur District. He owns five bighas of land. He was earning only Rs. 400 p m His income was insufficient to enable him to meet his both ends. An idea occured to him. He had heard much about dairy farming. He took to this as an experiment. This earned him rich dividents. It has also helped him in increasing his level of income and improving his standard of living. He crossed domestic cows with exotic bulls and achieved encouraging results His success has been source of inspiration for others

-F.P.O. Jaipur

Time Bound Programme for Full Employment

S. Sabapathy
Senior Investigator, Overseas Employment Cell
Union Ministry of Labour

THERE IS a broad consensus on the need for Manpower Planning at different levels with a view to ensuring the participation of the people on the one hand and opportunities for planning at the State, the District and the Taluka or the Block level, on the other In the new plan strategy, block development plans will be a major instrument for achieving full employment in rural areas in a time-bound programme.

Planning Commission has recognised the importance of area planning and in fact constituted a Committee under the Chairmanship of Prof. M. L. Dantawala to prepare the comprehensive guidelines for block level plans. Under the Planning Commission's concept of multi-level planning, the administrative block will be the unit of grass-root planning For purposes of plan preparation and implementation, the block will be considered as part of a district and its plan will be coordinated with the State's plan. A token provision of Rs. 20 crore has been made for block level planning in the Union Budget for the financial year 1978-79. The sixth plan aims at covering 2,000 blocks in the programmes of area planning. Optimum ultisation of local resources and manpower is one of the important aims of area planning Block level plans were expected to generate an additional employment potential of 25 million man-years within the next five years as indicated by the Fiance Minister in the Lok Sabha.

Planning to Vocationalisation

The main aim of vocational education is to provide education and training to enable students to function as productive employees. The exclusively academic nature of education needs to be drastically re-oriented to make it more relevant to the 'World of Work' so as to solve the long standing problem of 'educated-unemployed'. The Ministry of Education is contemplating to divert fifty per cent of high school passed-out students in each district to take up training/apprenticeship programmes leading to their ultimate employment and thereby reducing pressure on higher education To the extent of existing employment, avenues fall short of these requirements, additional number of jobs need to be created at the district level in the light of employment potential and economic characteristics of the district Any purposeful introduction of vocational and technical training programme should invariably be based on the manpower needs of the area. The Education Ministry has also realised the importance of studying the manpower requirements of the area before launching the vocational education in a big way. In fact, the Ministry of Education has launched quick surveys in some districts of the country for studying the varied manpower requirements of the area.

Area Planning to Correct Imbalances

The estimation of the manpower requirements is important and more important is the determination of the specific spheres of the occupational activities of the people in the different parts of the country. It is imperative to correct the imbalances while attacking unemployment and under-employment in the existing situation obtaining—

(i) between the skills required and skills available ;

(ii) between the preparation and training need and assessing what they get ;

(iii) between the task of priority in development and the work undertaken ; and

(iv) between the rural areas where the services of such professionals as agricultural scientists, forest experts, engineers and doctors are required and urban areas where most of the professionals are employed.

These imbalances are on account of a complex forces but basically it is the result of absence of incentives for persons to acquire special skills and education and also lack of potential employers for utilising such skills and channelising energies in jobs of priorities for national development. Area Planning is likely to prove the most effective approach in this context, to the problems of employment and development of industries whose establishments of an area should be given needed encouragement to counter their situational handicaps.

Need for Area Skill Surveys

There is a need to coordinate continuously manpower needs and employment opportunities with the output of the educational system and the technical training facilities In this connection, it was recognised that efforts of the Government at the States will have to be towards reorienting the educational pat-

tern with a view to meeting local employment opportunities arising in future in different areas. This was emphasised in the paper "Towards Growth with Justice" presented to Parliament. It was also observed that in order to provide essential tools for effective and purposeful functioning of these programmes, it was necessary to establish machinery which would ensure continuous flow of information about the current and future demand and supply of persons belonging to differenent occupations at the area level. With this view, the Directorate General of Employment and Training, Ministry of labour, Government of India, have launched a programme of Area Skill Surveys in fifteen selected districts of the country, on a pilot basis to grapple with the problems of translating economic goals set forth in the planned economy into manpower terms. This was the first attempt to tackle the imponderables of manpower planning and evolve a machinery intended to provide specific information on the changes needed in the size and the quality of training and apprenticeship programmes to meet future requirements of the country at the microlevel. It also provides details on the out-turn from educational and training institutions, avenues and scope of self-employment. Specific occupations/skills where supply is likely to outstrip demand and vica-versa have also been identified for taking suitable remedial action to remove imbalances of man-power at the area level and for proper utilisation of human resources.

There cannot be generalised policy equally applicable to all areas. Area Skill Survey approach was the first attempt to study the manpower planning from the national level to the grass-root level. The surveys have also thrown light on the oft-repeated claim that rapid economic development owing to the greater industrialisation of the country have created more opportunities and assessed if these have snow-balling effect on the employment opportunities without resorting to any special method directed towards the creation of more employment.

In other words, Areas Skill Surveys had made effo to find answer to such vital questions like :

—what are the various expansion plans of t industries and their impact on manpower ı quirements ?

—whether the expansion plans would give fillip the ancillary and sub-contracting units ?

—could such units open avenues of self-emplc ment ?

—what are the trades for which the indusı conducts its own training programme ?

—what are the trades which lean on other esta lishment for their needs of manpower or tec nical personnel as also the possible change technological pattern of the industries woı require ?

Selection of Areas

For conduction of area Skill Surveys the country v divided into five zones and three districts were chos from each zone. Among the three areas taken from each zone, efforts were made to ensure that, far as possible, they represented (i) industrially : vanced, (ii) industrially developing and (iii) indusı ally less developed with pre-dominent rural econor The areas thus selected were Aurangabad, Bangalo Bilaspur, Burdwan, Cuttack, Cannanore, Gorakhp Gurgaon, Kanpur, Kaira, Kamrup, Ludhiana, Poo Udaipur and Visakhapatnam.

Evaluation

The utility and performance of the area skill surve were evaluated by an Expert Sub-group of the Emplc ment Service comprising State Directors of Employm drawn from each of the five zones; planning Comı ssion; Central Statistical Organisation and the Direc ate General of Employment and Training on the b of reports of Bangalore, Ludhiana and Gorakh reports. The Expert Sub-group, besides sugges improvements in the methodology and technique de

TABLE I

Occupation	Manpower Requirements		
	Poona	Kanpur	Visakha patnan
(1) Professional, technical and related workers	23671	10907	98
(a) Scientist, engineer and technologists	11328	2153	28
(b) Doctors and medical and health technicians	2256	986	7
(c) Teachers	8132	6778	56
(d) Accountants, social scientists and other professionals.	1955	990	5
(2) Administrative, executive and managerial workers	6827	7246	21
(3) Clerical and related workers	16265	8952	6
(4) Sales workers	2229	2513	61
(5) Service workers (excluding sweepers, water carriers, watermen, chowkidars, etc.)	11351	3150	33
(6) Farmers, fishermen, loggers and related workers (excluding agricultural and plantational labourers)	1389	444	37
(7) Production process and related workers and transport equipment operators (excluding unskilled labourers).	74069	43374	339
(8) Unskilled workers	29694	13821	230
TOTAL	1,65,495	90,407	84,1

ed that the degree/level of skill for each occupation may also be assessed so as to make the results more useful in reorienting training programme. Accordingly, technical surveys have also been carried out in the three areas of Poona, Kanpur and Visakhapatnam along with intensive studies on the line suggested by the Expert sub-group.

Findings of Area Skill Surveys

On the basis of (a) employment; and (b) replacement needs due to attrition in the employed work force in conformity with the accepted norms, manpower requirements and self-employment oportunities have been calculated at the rate of 2 per cent per year, and (c) Vacancies remaining unfilled on the reference date.

The table No. 1 of the previous page gives the occupational-wise details of manpower requirements for the districts covering the period 1974-79.

Advance identification of future manpower requirements, occupation-wise, will be highly useful to the policy makers in arranging suitable training facilities to unemployed youths. Diverting educated youths to the proper channels of employment will go a long way in mitigating the tension prevailing among the educated youth on account of prolonged unemployment. Block level planners may look into the findings of Area Skill Surveys for optimum utilisation of local resources and manpower.

(ii) Area Skill Surveys have furnished information relating to future self-employment opportunities in the rural areas. "Let self-employment and not wage-paid employment be your aim", should be the slogan for solving the problem of rural unemployment and under-employment. Area Skill surveys conducted in different areas have identified the following occupations in which good scope exists for self-employment: Dairy farming; retail selling; brick and tile making; poultry farming; electrical wiring and repairing; food canning and preserving; flour grinding; carpentary and sawing of wood; tailoring; blacksmithy; rope making; khandsari and gur making; oil expelling; sheep and goat rearing; mud pottery; weaving (power loom); weaving (handloom), bidi making, agarbatti and candle making; repairing of farm equipment. The fields have been identified after making enquiries from village elders, government village officials, district officials of the concerned departments, such as, industries, planning, Agriculture, etc. Locating suitable fields for self-employment opportunities is **sine quo non** for proper block level planning.

Unemplyoment in Rural Areas

Through Area Skill Surveys, an attempt has also been made to estimate educated unemployed (matriculates and above) and skilled artisans possessing recognised certificates in the rural areas. The table No. 2 indicates the number of unemployed, vis-a-vis, number registered with Employment Exchanges.

It is evident that all rural employment seekers have not registered with the Employment Exchanges The registration is voluntary and it is not obligatory on the part of employment seekers to get themselves registered with the Employment Exchanges for seeking employment. Therefore, it is absolutely necessary to quantify the rural unemployment through block level surveys. The Estimate Committee of the Lok Sabha in its Twentieth Report had also opined the necessity of entrusting the collection of unemployment statistics at the level of panchayat, municipality or any other unit of local self-government or revenue officer assisted by local school teachers or gram sewaks. The Planning Commission's suggestion to open employment exchanges in the rural areas during the new plan period should be viewed favourably in this context. It is for the block level planners to see the writing on the wall and act accordingly.

Table 2

Number of Unemployeds and Number registered in the Employment Exchange.

Area /District	Number of unemployed persons in rural areas (estimated)	Number registered with Employment Exchanges
Poona	6,792	1,647
Kanpur	11,114	1,471
Visakhapatnam	6,958	4,695

Utility of Skill Surveys

Area Skill Surveys were proved to be highly useful in initiating action in the following fields at the area level :

(a) Vocational guidance and career advice ;

(b) Self-employment ;

(c) Job development , and

(d) Employment promotion.

Banks and financial institutions have utilised the information for locating growth centres. Banking authorities also opined that the information furnished by the surveys can be utilised for planning banking business in various districts e g. the potential for self-employment schemes, small scale industries and other developmental activities in the district and also deposit mobilisation schemes in those districts. The information furnished by the surveys will, thus, be highly useful to the policy makers and its success lies in the implementation of the various recommendations contained therein.

Skill Surveys and Development Programmes

Realising the utilities of Area Skill Surveys, Planning Commission have decided to request various States/ Union Territories to launch area skill surveys as a part of Area Development Programme. According to the Deputy Chairman of the Planning Commission, "Area planning implies close identification of activities suitable to a particular area and capable of absorbing local labour surplus. Area planning also implies much more intimate involvement of the people whom it is proposed to benefit, both in the formulation and in the implementation of development plans". Area Skill Surveys which are expected to be launched as a part of Area Development Programme, is destined to play a pivotal role in the identification of fields suitable to absorb the rural surplus manpower. □

Rajasthan's Antyodaya Programme :

An Analytical Study

Amitava Mukherjee and Neela Sen Gupta

THE YEAR 1977 has been eventful for the state of Rajasthan. A massive programme 'Antyodaya' for the 'poorest of the poor' in every village was launched in this year. 'Antyodaya' as the name spells out is the upliftment of the 'last man in the row'. It has the lofty aim of raising the downtrodden in the villages. The programme is unique of its kind. The poor is no longer doomed to his cursed fate and wretched living. He can see a ray of hope, the way to a decent life.

Antyodaya' aims at providing the poor resources for earning a better living. The poverty line has been determined at an income of Rs. 55 per capita per month or an annual income of Rs. 3300 for a family of five. Of the total amount estimated for a series of economically productive activities, two-third is being advanced as loans and the rest as subsidy.

There is an immense task to be performed. In a period of ten years about two million families will be offered help.

'Antyodaya' in Action

As many as 160,000 families were identified as the poorest of the poor among the rural population, whose poverty deserved state support. They were fitted into one of the multi-pronged programmes as follows :

(a) 25,000 'Antyodaya' families have been covered under 'Old Age and Disability Pension Scheme'.

(b) 40,000 families were allotted lands along with credits for purchase of seeds, fertilisers & development of land.

(c) Loans and subsidies were made available to 50,000 families for self-employment like blacksmithy, sericulture, foodgrain processing and rural transportation. More fully spelled out in table I.

(d) 5,000 families were given loans/aid for khadi production.

(e) 5,000 families have been given employment opportunities on less stringent terms in regular public sector undertaking and semi-government/government organizations. Additionally, wage employment has also been provided by both the private and the public sector.

(f) Other schemes based on local resources are being suggested for the rest viz. allotment of saltpans to 750 'Antyodaya' families in Nagaur district ; allotment of lands for raising forestry and pastures ; allotment of mining rights to 'Antyodaya' families in Udaipur and Sawaimadhopur districts ; engagement in fisheries and river training.

The execution of the programme is entrusted to the care of six-tier administrative machinery—the services of the co-operative Credit Institutions, nationalised banks, District Development Authority/Small farmers' Development Agency. Revenue officials have also been requisitioned [illegible] details of the programme and [illegible]

Saradhana [illegible]

Saradhana is a small village [illegible] Rajasthan. It has an area of [illegible] this the area under irrigation [illegible] During the years 1969 to 1972 [illegible] famine, it was also hit by floods [illegible] drought in 1977-78.

The village has a population of 5289 ([illegible] with 825 households. Of these households [illegible] have an income below Rs. 100 per month. [illegible] occupational structure of the village has been highlighted in Figure II. In 1977 twenty nine households were chosen as beneficiaries under the 'Antyodaya' programme. Of them, two refused to take loans, two were defaulters in the past whom bank refused to give loans, two got jobs other than that of self-employment under 'Antyodaya' programme and bank formalities for three families were not complete even by the end of 1978 when this village was visited.

So a total of twenty families benefitted out of this self-employment scheme of 'Antyodaya'. In addition, ten families were granted pension on a monthly basis for they had no member in the age group of 15-59 capable of economic activity. As land is supposed to be a status—symbol for the villagers most of the 'Antyodaya' beneficiaries wanted land. As land was not available for distribution in Saradhana, ten families went in for 'camel cart' which was next in order of preference. The remaining ten families sought for other types of self employment such as Nivar-making, carpentry etc.

Sheep unit, goat unit, carpentary and cycle repairing shop have been quite viable projects in the village Nivar-making and mat-weaving could be more worthwhile project if some type of an assured market be found for the products. At present they are thriving on a very narrow range of market facilities.

A close look at the projects undertaken by the twenty 'Antyodaya' families lends credence to the view that not all projects would be economically productive units in the context of the socio-economic conditions existing at Saradhana. Let us take the example of camel-cart. Saradhana has already 35 camel-carts operating from village to town and back. These carts remain under-utilised in the sense that they carry, on an average, 10 quintals per day just for 15 days a month In the rainy season this mode of transport remains suspended for nearly two months. Unless the demand for the utilisation of camel-cart increases the addition of ten more camel carts in the village would complicate the situation. Given the demand for camel-cart mode of transport remaining the same, increase in the number of camel-carts would lead to distribution of income among the camel-art owners themselves making the old set of camel cart owners worse off. Thus there is a distinct possibility of distribution of income to flow not from the very rich to the very poor but from the poor to the poorest and in all possibility, drag a few more persons below the poverty line

An interview with Shri Chetan Giri of Saradhana who is the receipient of a sewing-machine under the 'Antyodaya' programme brought out a few facts. His sewing machine is not viable now or only marginally so. He received a loan of Rs. 450 for buying a sewing machine, backed up by a loan of Rs. 100 per month

TABLE I

Districtwise Progress of Antyodaya Programme in Rajasthan upto 15-9-19

No. of Families benefitted under various schemes

	Districts	No. of Villages	No. of families identified	Old Age pension	Land allotment	Employment	others	Grand Total	Percen of fam cover
1	2	3	4	5	6	7	8	9	
1.	Sirohi	436	2584	543	1206	5	..	2584	1(
2.	Jodhpur	701	3613	1626	306	29	550	3613	1(
3.	Udaipur	3029	15494	1933	9382	18	4	15339	9
4.	Alwar	1876	8572	1260	4133	125	57	8475	9
5.	Pali	881	4614	629	1076	261	..	2143	9
6.	Bikaner	538	2394	273	377	39	369	2143	8
7.	Tonk	1005	4331	521	1162	33	..	3833	8
8.	Kota	1878	4810	1163	1357	119	38	7319	8
9.	Banshwara	1462	4133	351	2849	1436	..	6185	8
10.	Churu	844	4173	305	367	11	263	3474	8
11.	Jalore	595	3606	787	722	39	..	2890	8
12.	Bundi	733	3330	260	1292	34	.	2629	7
13.	Barmer	844	3942	507	869	5	356	3030	7
14.	Sawai Madhopur	1531	6923	1951	515	178	51	5199	7
15.	Nagaur	1209	6219	774	230	150	1306	4670	7
16.	Chittorgarh	2358	3896	442	2328	173	21	6429	7:
17.	Sikar	811	5873	1449	82	91	326	4110	6
18.	Dungarpur	832	4160	468	382	250	.	2888	6
19.	Jaipur	2716	12726	2253	2416	248	279	8710	6:
20.	Bhilwara	1521	5706	419	2879	24	.	3868	6
21.	Jaisalmer	409	2214	188	605	9	309	1476	6(
22.	Jhalawar	1450	6911	689	2376	218	66	4537	6(
23.	Jhunjhunu	685	3402	480	..	12		2234	6
24.	Bharatpur	1886	11596	3664	778	822	100	7142	61
25.	Ganganagar	1511	6329	1741	742	100	113	3600	5(
26.	Ajmer	957	7217	780	1184	181	..	3727	51
	TOTAL	32638	160517	25453	39615	4610	4208	124261	77

Source: Special Schemes Organisation, Govt. of Rajasthan.

to buy cloth. The average stitching charge is Rs. 2 Shri Giri has 25—30 families as his clients. Given that 50 per cent of the villagers have their clothes stitched in town, that they do not very often go in for new clothes, except perhaps during festivals, and that the population in rural areas is generally poor, it would be too much to expect that Shri Giri would marshall up orders of such magnitude as would leave him with consumable income to raise his living standard, after meeting debt obligations. It may be necessary to realign the beneficiary families or enjoin upon the 'Antyodaya' families that each consume the goods of the other(s).

Loans need to be given for viable projects taking into account the availability and profitability of the goods to be produced by the beneficiaries in relation to their village and the neighbouring areas An elaborate estimate of the demand pattern would have delayed the launching of the programme as was correctly pointed out by the officials in charge of its implementation. Even so, every effort should be made for having a quick estimate to avoid the pitfall on way to success.

General Observations

In course of our field study regarding the 'Antyoda programme few unsatisfactory aspects have come light. In some villages the land allotted was of m ginal type which instead of being an asset, co prove to be a burden for the Antyodya family.

It was also noticed that the socially backw classes in villages not on route of Co-operative M Marketing Society, were reluctant to take up cow-u under the 'Antyodaya' programme even when th existed a village market for the sale of milk. Tl believe that caste prejudices will prevent a considera section of the local buyers from purchasing milk fr them and the margin of wastage will be so high tl they will have to run at a loss.

Another issue which came to light was the selectio procedure adopted in the villages for choosing t

TABLE II

Occupational Break-up of Village Families at Saradhana (1977)

Occupation	No. of families engaged
1. Agriculturist	400
2. Cobbler	150
3. Carpenter	5
4. Blacksmith	7
5. Tailor	5
6. Oil Ghani Owner	2
7. Barber	6
8. Pottery-maker	15
9. Gold-smith	3
10. Cloth-dyers	2
11. Bharbhuja shop	1
12. Handloom	3
13. Bangle-making	2
14. Shop-owners	8
15. Daily labourers	220
	825

beneficiaries. In some villages the selection of families was not made according to the criteria laid down by the state government but according to the wishes of the powerful locals. This has imparted considerable favouritism and bias to the programme itself and thus deflected it from its real goal.

Some Recommendations

'Antyodaya' programme spells out perfect freedom on the part of the beneficiary regarding the choice of project. This is based on the assumption that his choice is rational from all angles. Moreover, he should have the main say because it is he who is taking the debt and the responsibility of re-paying it. The assumption of rationality on the part of the beneficiary is not corroborated by the reality of the situation He being a poor illiterate, ill-equipped, unenterprising with little or no experience in carrying on an independent business, should be helped by some sort of an advisory body set up to guide him in matters of selecting the project and running it.

At present 'Antyodaya' programme has no room for families below the poverty line who are past defaulters. It is understandable that mainly it was their poverty which stood in their way of repaying loans. If such cases are not taken up seriously and not allowed to participate in the 'Antyodaya' programme, their plight is likely to worsen. This might have serious implication of increasing inequality and poverty not only in the village but also in the state.

A special body could be set up to enquire into the claims of the selected beneficiaries. Without proper scrutiny benefits will go to the undeserving. It is essential to have a follow-up system in order to sustain the benefits arising out of the programme and minimise the losses. The system should also efficiently deal with the possibilities of the project undertaken by a beneficiary being run at a partial loss, a complete failure or kept as mortgage with a 'mahajan'

Revaluation of each type of project undertaken is very important to determine the economic viability of the projects in the light of one year of 'Antyodaya'. The idea of 'ensuring a minimum reutrn' which would enable 'the beneficiary families to repay loan instalments and leave enough for consumption' would otherwise be difficult to realise.

The government would do well to examine the proposal of supporting the 'Antyodaya' families by helping them to market their products, howsoever small in quantity, outside their villages. The Co-operative Marketing Societies might play a useful role in this regard.

It is singularly important for the government to see that steps are taken to counteract the famous 'Demonstration Effect' of Duessenberry. As the 'Antyodaya programmes go on, incomes will rise and the beneficiary families tend to buying goods like transistors, bicycles etc. If the 'Demonstration Effect' is allowed to operate un-abated, the impact of 'Antyodaya' in raising the income of the rural poor for better food and health conditions, will not be conspicuous.

Admittedly, counteracting the 'Demonstration Effect' is a difficult proposition and may not be required immediately. But the establishment of adequate infrastructure to mop up additional disposable funds with the beneficiary families is essential. One suggestion would be that banks involved in financing the projects may introduce a system of 'tiny savings' where an authorised personnel of the bank will visit each client everyday and collect a small but fixed amount of money. A system such as this would make it easier for the beneficiaries to save, repay their loans and develop the habit of thrift.

Another suggestion could be that government expenditure on 'Antyodaya' should be stepped up in proportion to the rate of inflation. The net result would be that the rate of government expenditure in real terms is constant over-time

One last word about a non-economic factor. Some experts like Meier and Baldwin, hold that the basic determinants of economic growth are non-economic. The most important non-economic factor, on which attention ought to be focussed, is population. Poverty among the people, nibbling at the bottom of income scale is greatly acentuated by the increase in family size The 'Antyodaya' families ought to be induced to family planning and adequately convinced of the necessity of restricting families which lies in their own hands. If the rise of income due to 'Antyodaya' programme is accompanied *pari-passu* by expansion of family units (because greater income generates at the bottom of income scale confidence to rear bigger families) then the 'attack on rural poverty' may well prove to be an 'attack on rural prosperity'. □

Now Antyodaya families can get loans with the backing of group security and hypothecation.

A Report—

Amarpurkashi Village Development Project

Major Sedlev Sweeny
Brynayre, Talybont-on—Usk Breconshire

Rural Development is the basic essential for the overall development of the country. Government is implementing the rural development programmes with particular care. Voluntary effort to supplement official action in this regard is a must for the faster transformation of our country which lives in villages. Such voluntary activities also highlight the intricate problems facing the successful progress of the areas for away from the cities. The author, having paid a visit to one of the village development projects in U.P. in November* 1977, *makes an interesting analysis of the situation, pointing out the hard way to prosperity.

I had known Mukat Singh for a number of years and was impressed by his Village Development Project and by his own enthusiasm and sincerity. But, having seen several projects in India, I was reluctant to commit myself to positive support until I had seen his work on the ground. I was therefore delighted when he invited me to come to Amarpurkashi. My previous work in India had been with Tibetan refugee children: I had not lived in an Indian village nor had I been able to look closely at Indian agriculture. Later, when I organised and ran the Tibetan Farm School in Wales, I did so in the instinctive belief that whatever the difference between Welsh and Indian conditions, the principles of good soil, crop and animal husbandry were universally the same. In this belief I was often criticised by those who said that nothing I could teach in Wales would have any relevance in India. Now was my chance to find out.

Indian Project

I arrived at Amarpurkashi and stayed for two weeks. Originally I had planned to stay longer, but for various reasons was forced to shorten my stay in India. Nevertheless I was able to look closely at the people, crops, animals and at the various projects planned or already operating. I also had long discussions with Mukat on the social and political life in India, its effect on the lives of the villagers and on his own aspirations and achievements. As he clearly pointed out, many Western observers think only in terms of positive plans and projects against a background in their own countries and fail to grasp the significance of the enormous additional problems of the developing world in general and of India in particular. At first I was impatient when Mukat countered my suggestions with the snags and difficulties, as I was when he spoke of his plans to hold protest meetings and marches, whenever bureaucracy or corruption threatened the wellbeing of his villagers. Although I still think that to some extent I was right—battling against others is a negative and destructive occupation—it is also true that unless the evil forces of corruption and obstruction can be controlled, the effort put into projects will largely be wasted. This, in a nutshell, is the problem of India (of which more anon); a problem that had made many Western wellwishers, as well as educated Indians, turn away in hopeless frustration.

In the end I was forced to agree with Mukat that India cannot be written off unless at the same time one abandons hope for the world. This conviction has led him and his brave Australian wife to give up secure jobs in England and devote the rest of their lives to improving the lot of India's half-billion villagers. Such vision, courage and determination must be supported, whatever the risk of disappointment and failure.

The Setting

November in Northern India is very pleasant. The monsoon is over, the ground is still green and the air warm by day and refreshingly cool at night. The villages nestle snugle amidst neatly managed fields of sugar cane, millet, sorghum and potatoes, giving an appearance of tranquil prosperity to the casual observer I was filled with a feeling of timelessness in an unchanging and unchangeable India. For all the luxury hotels in New Delhi, the buses and lorries, State airlines and steelworks, atomic power and chemical plants, the new tractors and implements with such limited life-expectancy, life within the village goes on as it has for centuries; slowly, patiently, obedient to the demands of the seasons and the caprice of weather, official and moneylender. Half-a-million villages containing practically the whole population of the country still toil endlessly to keep body and soul together; to save enough of their produce from drought and flood, from tax collector and middle man, from decay and predator to fill their bellies and raise their children. On the one hand the earth seems so rich and productive, on the other the people are so poorly nourished that it is a wonder they have the energy to continue the struggle.

Amarpurkashi village contains some 100 families; about 700 souls in all. The houses are mainly of mud with one or two small rooms and a tiny kitchen, and are surrounded by small courtyards in which the animals are tethered and fed. A few of the streets are bricked and wide enough for a bullock cart to pass, the rest are narrow and mud surfaced with open drains from the houses and cattle yards. Around the edge of the village are three ponds into which the drains discharge. Some houses have wells with pumps, other

rely on communal wells ; very few are connected to the electricity supply. There are richer villages in the Punjab and elsewhere, but there are also many which are much poorer. Amarpurkashi and the surrounding villages which make up the Project can fairly be described as typical insofar as the standard of living and health of the nation is concerned. But in one respect they are far from typical, for they have within them a new spark of hope, a new awakening to the possibility of better times to come. This new light stems from Mukat Singh's imaginative Village Development Project on which he has devoted all his energy and resources for the past seven years.

The Land

The soil is strong clay-sand mixture of great depth overlying an excellent water table. The surface is mainly level and 75 per cent of the land is irrigated from Government and private tube wells plus a number of private open wells with bullock-driven bucket pumps. The soil is inherently fertile although the organic content plus micro-fauna and flora shows signs of depletion. The land is divided into a large number of small plots ; a typical family farm consists of about 3 acres divided into 7 or 8 plots which may be scattered. Two crops may be grown in one year on the irrigated land ; one being harvested in November (mainly rice, sugar cane and pulses) and the other in May or June before the monsoon.

The Crops

Almost any crop will grow and ripen well in this area, and it appears likely to me that even on the very small family farms it should be possible to feed the people extremely well and still have surplus produce to sell for those necessities unproducable within the group of villages. As it is, about 75 per cent of the land is growing sugar cane for sale to the local plant where prices are uncertain, to put it mildly. Rice, millet, sorghum, wheat and barley are the main cereals ; a variety of pulses provide protein food, and vegetables include potatoes, cauliflower, radish, tomatoes, aubergines, leaf vegetables (spinach), marrows and melons. Mustard and oil-seed rape are grown for oil Ground nuts, butter nuts and water nuts are also produced as is a little jute for rope making. Chillies are grown for spice and local fruits include Jackfruit, mangoes and bananas.

Crops are rotated to some extent, but the preponderance of sugar cane limits the full development of alternately cropping with cereals and pulses, brassicae and roots.

The exact extent of cash-cropping is difficult to ascertain. In eight families surveyed this varied greatly; some consuming most of their own crops (except sugar cane) others selling practically everything. I think it is true to say that the villages as a whole are committed to a cash economy and their agriculture is designed to make money as the first priority and to feed themselves as the second.

The crops suffer from a variety of pests and diseases, and the use of pesticides is encouraged and increasing steadily. There is also a growing use of chemical fertilizers in conjunction with irrigation and 'improved' seed to grow the weightier crops which make up 'the Green Revolution'. That this scale of cropping draws heavily on the humus resources of the soil as well as on the minerals cannot be in doubt, and it seems likely that this depletion is reflected in the inability of crops to withstand disease and predators. Unfortunately a great proportion of the cattle dung is burned as cooking fuel and does not find its way back onto the land except as ash. Some farmers do make a [illegible] using the cattle dung during the [illegible] wet to make into cooking fuel. [illegible] to be very well built or aerated, but the [illegible] ed amount of humus for nursery beds.

The People

The villagers live in 'extended families' on average about eight persons to one house. Parents and grandparents, children and grandchildren, in-laws and others make up some of these families. Infant mortality is high ; in the worst case a woman had one survivor out of 19 children born ! Child marriages are still common and many—but not all—of the women are still in strict purdah. Domestic work and care of buffaloes is done by the women, cultivations and care of the bullocks by the men. Threshing, winnowing, gleaning and grinding of corn and chaffing of straw are shared by both sexes.

Within the villages there are some very competent craftsmen : carpenters, wood turners, blacksmiths, wood carvers, mechanics, wheelwrights and tailors. Their skill is the more surprising in view of the almost complete lack of proper tools, most of which they make themselves. Their ability to improvise is astonishing.

The health and general physique of the people is far from good. An apparent shortage of first class protein results in poor development from childhood onwards, and the people are very susceptible to a number of diseases including malaria, typhoid, TB, dysentery, skin troubles and 'fevers'. There must be a considerable natural immunity to many diseases as a result of the lack of hygiene and facilities, but I expect that several diseases are endemic and cause a degree of disability without becoming acute.

Medical services are minimal and doctors often not qualified. The policy regarding infectious diseases (eg. Typhoid) is crude but realistic : '. . we treat the patient with medicine but have no facilities for protecting the others'.

Apathy is the greatest problem, and this is what Mukat and his wife are struggling to overcome. Too often the villagers have been promised a better deal by the Central or State Government, but 'many's the slip twixt the cup and the lip', and the attitude is 'I'll believe it when I see it'. This has gone on for so many generations that it is difficult to arouse interest in any new idea. Nevertheless, there is a stirring amongst the people of the Amarpurkashi group of villages and the Project *has* made some progress, albeit with disappointments and failures as well. Probably the only way to stir the imagination is to show, for example, a better way of farming and living and a better understanding of nutrition and health. This is long-term education in its truest sense and requires great vision, wisdom and endless determination. It can only happen in a community blessed with a leader like Mukat Singh. Such men are rare, and it may be argued that their contribution is but a drop in the ocean. But if, in his lifetime the 'yeast' of his vision can leaven ten villages and bring them to a higher plane of life, others might begin to follow that example. It will be a long haul indeed !

The Animals

An average family of eight might own four or five cattle, both buffaloes and cows. The castrated bullocks of both breeds are the main source of power for tillage and transport and still work the bucket lifts at the open wells for irrigation of the land. The imple-

ments they draw have changed little over the centuries. The wooden plough with locally forged iron share, the timber beam 'leveller' and the universal ox-cart are to be seen everywhere. An occasional ox-cart mounted on rubber-tyred lorry wheels and a few animal-drawn disc harrows are the only 'modern' innovations used by the majority of farmers.

Now and again one comes across a well-grown pair of bullocks in reasonably good condition ; the sign of a well-to-do, enlightened farmer. Most of the cattle, however, are under-sized, painfully thin and weak. Through lack of protein they develop very slowly ; a two-year old cow often being no bigger than a 6-month old Jersey heifer in Britain. Most of the cattle are fed on the chaff to rice straw, millet and sorghum stems plus a little dusty creeping bent grass that grows by the roadside and perhaps the leaves from the branch of a tree. Enlightened farmers might add some oil-seed cake and add a little sorghum meal, but the general level of nutrition is appallingly low.

Milk yields reflect the level of nutrition, buffaloes generally giving more than cows. The potential yield of these cattle is probably low compared with European animals, but it is quite wrong to suggest that improved breeding would increase production so long as the farmers do not understand the principles of animal nutrition (or are unable to afford proper fodder).

A few farmers keep goats which seem to thrive better than cattle in local conditions, but even they are hardly show specimens. Even fewer keep pigs and these are of a very poor quality. As far as I could ascertain the vast majority of the people of these villages are vegetarians, and one can see little economic value in the many 'dry' cattle kept by the villagers. These all eat the limited food and keep the rest from growing to their full potential. There are long-standing religious traditions which make it impossible to alter this situation ; what is more, the majority of the cattle are owned by independent individual small farmers and it would take more than 'high level policy' to make them change their ways.

A large number of semi-wild dogs inhabit the villages, many of them in dreadfully poor condition. Whilst I was there one teenage boy died from blood poisoning from a dog bite ; not the first time this had happened.

A few free-range chickens pick up what they can about the village, but do not lay many eggs.

The Development Project

The Indian Government 'Block Development Scheme', started shortly after independence, had substantial initial success, particularly in the development of tube wells, canals and irrigation as well as in the building of access roads to villages which were formerly cut off completely during and after the monsoon. But more recently the scheme has not been a success for the following reasons :—

(a) The standard 'Block' of 100 villages was too large and unwieldy.

(b) The Block HQ setup was too remote and unrelated to the village situation. The HQ Staff were townsmen who did not care for village life.

(c) Block boundaries were political instead of rural/geographic.

(d) The scheme was too rigid to allow for varying village situations.

(e) There was lack of commitment (after initial enthusiasm and success) amongst Block Development staff.

(f) Help under the scheme went mostly to the better off and bypassed the poorest who became even poorer and more frustrated.

The ultimate success of any development scheme must depend upon the involvement and enthusiasm of the villagers themselves, but the level of Block Development thinking is too abstract and remote to stir the imagination and overcome the apathy of the poorest people. Likewise, the State education system, with its emphasis on paper qualifications and status does not fit people to face the real problems of village life.

The Amarpurkashi Village Development Scheme, founded by Mukat Singh differs from the Government 'Block Development' as follows :—

(a) The scheme embraces 10 villages with common interests.

(b) The villages were chosen because of their natural and mutual attraction to Amarpurkashi (which is centrally placed adjacent to the main road).

(c) The education offered (apart from the Government primary school) is designed to stir the imagination and awaken the realisation that there is hope of better standards of life and health, and to demonstrate how these aims may be achieved.

(d) Every effort is made to ensure that the advantages flowing from the project shall be enjoyed by *all* the villagers, and not only those already better off.

(e) The education and training is primarily intended for the inhabitants of the associated villages, but provision is made for training selected outsiders in order that the concept may spread to other groups.

The following projects have been started under the Scheme :—

(a) The Junior High School has more than 120 enrolled. The syllabus follows the U.P. standard courses, and there is additional instruction in gardening and plans to include some manual skills to fit the students for village life. Great efforts are made to open the eyes of the children to the possibility of creative thought and to wider horizons.

(b) The Amarpurkashi Agro-Industrial Polytechnic has been designed to provide discussion forums and practical training as and when the need arises. It does not work to any fixed term or syllabus. It is hoped to equip the Polytechnic with its own workshop and with tools for carpentry, metalwork and electrical work. During my visit to APK, one general course was planned for students from outside the Project. The idea was to combine lively discussions with practical training and tests to foster initiative, leadership, observation and practical manual work as well as to introduce the principles of farm husbandry and nutrition. Some 20 students were enrolled, but in the event only two turned up. The instructors were given some preliminary training (with my help) before the students arrived, but the course never got going whilst I was in the village. As this happened at the same time as Mukat was taken ill with suspected typhoid, it is hardly surprising that the course was not a success.

but I must say that the syllabus had not been planned right through and I feel that the course might have been rather a 'hand-to-mouth' affair. Once the Polytechnic has its own building and workshop facilities, it should be easier to plan a thorough practical course.

(c) The Children's Centre has been temporarily closed because there is no volunteer to run it and it has not been possible to recruit a suitable local girl. Apparently any suitably educated girls are married and convention does not allow them to go out to work. Efforts are being made to recruit a new volunteer from abroad, but it strikes me that in the long term the Centre should be run by a local woman.

(d) Agro Hires. The Project has one good workshop which is used mainly for tractor, diesel engine and implement maintenance and repairs. It also doubles for practical instruction when Polytechnic courses are run, but is not properly equipped, nor is it roomy enough for the latter use. The 4-year old Zetor tractor has been off the road for some months awaiting a new tyre and general overhaul. It is in very poor condition largely due to lack of proper maintenance, and I do not expect it will do much more useful work. The new Massey-Ferguson tractor (made in India) had done less than 200 hours work at the time of my visit, but was already showing signs of wear and damage. Fortunately I was able to write down and give practical instruction to all the drivers and mechanics in daily, weekly and monthly maintenance and am certain that they can do all the tasks perfectly well if adequately supervised. There are two young men on the Establishment who hold degrees in agriculture ; Indal Singh Bhadoria (Mukat's Deputy) and R. B. Pandey, the Agricultural Adviser. Between them it should be possible to arrange strict supervision. The tractors are equipped with disc harrows, spring tine cultivators, leveller board and a trailer. Although the M-F 35 works regularly in the fields on hire, I am doubtful if the tractor hire service will ever pay for the fuel, oil, repairs, replacement parts and tyres as well as depreciation (which must be allowed for at not less than 25 per cent per annum) and driver's and mechanic's wages. If all these costs were truly reflected in the hire charges, few if any of the farmers would afford the luxury of tractor work, and once again it would be the poorest who failed to get the advantage of the service. The diesel pumping engine hire service, on the other hand, seems to be doing well. The operators and mechanics know the engines completely and are able to do complete overhauls with the tools at their disposal. Of seven engines owned by the Project, four were in working order and three being overhauled These simple engines are mounted on bullock carts and are in regular use throughout the group of villages. The animal drawn disc harrows are also provided by the service. These, like the tractor-drawn [illegible] tend to be used until they [illegible] out much maintenance or [illegible] I have observed at home as well [illegible]

(e) Fertilizer Agency. This was started [illegible] fertilizers were scare and getting into [illegible] hands of the wrong people. It successfu[illegible] corrected this wrong. Recently, however, [illegible] Government has subsidised fertilizers, [illegible] import duty has been removed and co-ope[illegible] tives have been set up which allow farm[illegible] to borrow the cost of fertilizers against th[illegible] future crops. The APK Fertilizers Agen[illegible] has therefore closed down and confines [illegible] activities to keeping an eye on the fair dis[illegible] bution by the co-operative. The escalat[illegible] use of fertilizers and pesticides by farm[illegible] who know little about their long-term effe[illegible] or the possible dangers is, in my opinion [illegible] matter of great concern.

(f) The Farmers' Consultancy Service is run [illegible] Mr. R. S. Pandey, BSc (Agric). He [illegible] a good conventional knowledge of the the[illegible] of agriculture and the beginning of so[illegible] ideas of the value of humus in the soil. [illegible] was not able to see much of his work during my visit as he was engaged in preparing for the Polytechnic course that failed to materialise.

(g) The Milk Collection Centre. This service seems to have improved the price the villagers in the three villages concerned get for their milk There has been talk of improvement of cattle breeding to increase yield and profit, but I am convinced that the first move should be to teach the farmers how to rear their calves and feed their milking cattle. Until they know how to make the best of their existing stock, there is no point whatever in thinking about breed improvement; indeed any premature attempt at such would end in very expensive failure Like the better seeds of the Green Revolution, expert feeding and management, and would die in conditions that the indigenous scrub cattle can tolerate.

(h) The cattle and vegetable market scheme was launched too soon and with insufficient preparation and experience. There was jealousy and fierce competition and the villagers did not understand the idea of competitive cattle showing. This project has been abandoned

(i) The Hoffman Brick Kiln was built by Mukat Singh as a private venture in 1970. Due partly to faulty construction, partly to late delivery of fuel, partly to incompetent handling of the fuels, but mainly to the very early onset of the monsoon, the first firing was a failure and a substantial part of the kiln was washed away. There has since been a concerted effort to get support for the training of an operator and the rebuilding of the kiln. This was nearly achieved with the promised support of the I.T.D.G. and Christian Aid, but due to several factors beyond the control of Mukat Singh, these plans collapsed and nothing yet has been done. There seems

very little doubt that a Hoffman kiln, properly constructed and skilfully fired would turn out better, cheaper bricks than the traditional Bull's Trench kilns which already operate every few miles along the main Moradabad-Chandausi road. If it were not expertly run by a well trained operator it would almost certainly be another costly failure.

(j) The Farmers' and Labourers' Organisation is designed to act as a Union to stand up for villagers' rights against exploitation and corruption. Under the leadership of Mukat Singh it has had some success, but still has a long way to go in rousing the poorest people to feel that they have any chance of standing against the stronger forces that exploit them. Nevertheless, it is a start, and is having some effect.

Suggested Projects

(a) Small Industry Project. At the request of a Tibetan ex-pupil now farming in Maharashtra, I took a hand-operated seed sowing fiddle to India. At Amarpurkashi I showed workshop staff and a local carpenter how to copy it. Together we made three copies and carried out a successful demonstration of sowing wheat and compound fertilizer. This implement, very cheap and simple to construct, is most suitable for Indian conditions. The market for it is wide open and with proper promotion and a well organised simple assembly workshop, it should be easy to start a very lucrative cottage industry. The capital cost would be far less than replacing the worn out tractor, and the chance of the project succeeding much greater.

(b) Food storage is a very great problem in India. Weather and predators destroy nearly half the food grown. I suspect that much valuable food grown in the villages is sold in the towns (rather than eaten by the villagers) because it is not possible to store it safely in the villages. Considerable work has been done in China and in SE Asia on design and construction of ferro-cement food storage bins and silos. The techniques are suitable for village workmen although skilled supervision is required to ensure good quality work. Designs and techniques are available in an excellent publication by the national Academy of Sciences, Washington, D.C. 'Ferrocement : Applications in Developing Countries', (sent free on request). This is a skill that might be taken up by the APK Agro Polytechnic to great advantage of the village group comunity.

Some of the Problems

The new Janata Party Government has adopted a policy based on 'Small is Beautiful' and promised to support small-scale agriculture (there is virtually nothing but small-scale in India) and village manual crafts. This Gandhian policy, if it can be achieved, is exactly what the villages need to bring about the radical change that alone can save the masses from disaster. To promise is one thing : fulfilment will certainly prove much more difficult. In the first place, Indian industry and big business saw immediately that heavy investment in agriculture and cottage industry would mean much less for them. How could they maintain industrial growth, exports, balance of payments, employment? There will certainly be heavy pressure on the Government to compromise. Second, there is the 'immovable middle', that mass of administrative civil servants at every level from Central to State Government, to District, Teshil and Panchayat. These 'faceless' men, with notable exceptions, are well nigh impossible to pin down, unwilling to make any decision that might put their jobs at risk, completely out of touch with real problems and out of sympathy with poor people, are generally lazy and too often corrupt. By the time the Government's intentions have filtered down through them, they bear little resemblance to the first inspired ideas, and the investment will already be sadly dissipated. Finally, there are obstacles within the villages themselves. Selfishness, jealousies, nepotism and corruption exist there too. It would take an army of Mukat Singhs to keep tabs on every individual who might try to obstruct or make off with more than his share of the booty. The problems can hardly be over stated. They are enormous.

The Way Ahead

The aim of the Amarpurkashi Village Development Project is to improve the lives of the villagers in the group, and, ultimately throughout India. From the material point of view this means improvement of health from better nutrition, hygiene and general living standards. From better health will flow the energy and drive needed to promote imagination, initiative and to overcome apathy. Only when morale is thus raised will it be possible for people to develop their full spiritual and cultural potential.

The land is good, and can provide the health-giving nutrition required by man if man will, in turn, provide the earth with the nutrition it needs to foster its own life and health. The whole process is a cycle of life in which the waste products of man, animal and plant must be carefully returned to the soil, which, in its turn produces healthy plants on which healthy animals and healthy men may be fed. In recent years man has tried to short cut this cycle by direct feeding the plants by chemical fertilizers. Like a man seeking strength through the whisky bottle, this process shows remarkable effects in the early stages, but sooner or later, the side effects begin to show. More direct 'feeding' is required to produce the same effect, biological balances are upset and the soil and plants become sick; finally a state is reached where a cure is extremely difficult if not impossible. The nutrition of animals and men by means of sick plants gradually brings on lack of vitality and increasing sickness in man himself.

There is a school of thought that suggests we are in such dire straits today, when population is rapidly outstripping resources, that we cannot afford the luxury of quality food, but must increase quantity at any cost. This policy might work for a generation (albeit with devastating effects on the health of mankind) but in the long run does not face up to the needs of our successors. Mankind is selling the future for the needs of today.

The policy of the Government of India is to support village agriculture and small cottage industries. This is excellent as far as it goes. But unfortunately it has not faced up to the full implications of the 'Cycle of Life' and the fact that true health can only issue from a healthy, living soil. The principles behind this concept of health are very clearly set out in the works of two great men, both of whom developed their phi

losophies and practical systems in India. The late Sir Albert Howard's 'An Agricultural Testament' develops the concept of the living soil and its effect on the health of plants in arguments of inescapable logic. The late Sir Robert Mc Carrison in his book 'Nutrition and Health' describes his work, spread all over the Indian sub-continent, in which he proved beyond any doubt that nutrition and human health are inextricably linked, and that the health of the food, and, indeed the health of the soil on which it is grown are every bit as important as the items of food themselves.

It is extremely difficult for a small village community 'to go it alone' and fly in the face of Government and generally accepted agricultural policy, even when the villagers know that the policy will ultimately lead to disaster. Nevertheless, a growing number of enlightened people *are* striking out on organic lines with remarkable success. The task is difficult but not impossible. By starting in a small way and working forward step by step, a community can make the change. But it requires courage, determination and strong discipline.

out. Then one can build on one's succe[illegible] step by step to greater changes. In the [illegible] purkashi I would suggest that Mukat Singh, [illegible] of the larger and more secure farmers in the group, should make the change over a period of five years with the aim of becoming a model farmer in self-sufficient smallholding with surplus produce for sale to meet the cash needs of his family. Others would be sure to follow his successful lead.

The gradual changeover must be accompanied by education in nutrition which will be very difficult in the conservative and prejudicated conditions of village life. The present malnutrition and poor physique of the villagers will only be improved when the people realise that they must start by rebuilding a healthy, living soil on which they can grow healthy, health-giving crops, which, in trun, they must learn to harvest, preserve, prepare and eat in the right proportions. This is a major enterprise in *real* education which might form the basis of courses in the Junior High School and the polytechnic. All other awakening and enlightenment on the social and political planes is really a waste of time if the people continue to be badly fed and of poor physique.

The present malnutrition and poor physique of the villagers will only be improved when the people realise that thay must start by rebuilding a healthy, living soil on which they can grow healthy, health giving crops, which in turn they must learn to harvest, preserve, prepare and eat in the right proportions

---

It seems to me that two major changes are needed in Indian farming today :—

1. To get back to a basically organic system of husbandry where the maintenance of the health of the living soil is the foundation on which everything else is to be built. This cannot be done on any long-term basis with chemical fertilizers and pesticides. The use of lime and basic slag as and when specifically needed is not ruled out. These are soil conditioners which regulate pH (acidity) and encourage the formation of nitrogen-fixing nodules on legume roots as well as encouraging soil life. They are not direct plant foods. The most potentially dangerous fertilizers are the direct-feed nitrogen chemicals which force rapid plant growth which burns up the soil humus faster than Nature can replace it, and can seriously reduce the useful living organisms in the soil. These and pesticides are at best makeshifts to provide plant foods which a dead soil can no longer supply and to hide the symptoms of pest and disease which are themselves an indication of bad husbandry.

2. To change to an economy where the production of high-quality, health-giving food *for use in the village* is the top priority, and the growing of cash crops for sale is at all times second to the growing of food to eat.

Which of these changes presents the greatest difficulty is hard to say. Both of them involve a complete break with generally accepted practice and Government policy. I do not suggest that anyone should try to change overnight. It would be wise to start on a very small scale with limited experiments carefully carried

Priorities for support

All my experience with the problems of the developing countries leads me to believe that in the long term the only true and worthwhile help is that which the people themselves provide from their own efforts. Any sustained aid from outside makes the recipients more and more reliant on hand-outs and less able to stand on their own feet. This tendency is compounded when aid takes the form of advanced technology involving high capital investment. This is not to say that advanced technology should be denied to developing countries, but merely that they should achieve it only through their own efforts and feel responsible for putting aside sufficinet capital to repair and replace it as it wears out. In the case of Indian villages the move towards Western standards must needs be slow if it is to be self financed. I believe that outside help is essential in the early stages, but that it should be limited to 'pump-priming' support for low cost enterprises which have a good chance of success, using the skills available within the community concerned ; or to strictly time-limited aid in the payment of teachers' salaries etc. until the whole project is ready to take over the responsibility. Only in cases of extreme destitution or misfortune should outright non-productive donations be made.

I must end by re-stating my conviction that the principles of good soil, crop and animal husbandry are universally the same. Nothing I saw in the Amarpurkashi village group in any way alters my view ; indeed I am more than ever convinced of the truth of this statement. □

Books

Technology and employment

Technological change and employment—A study of *Plantations by T. Bhatry, Macmillan*—1978 *Pages* 221 *Price Rs.* 75/-.

THIS STUDY of impact of technological change on employment in Indian Plantations is in the series of studies on agricultural technology sponsored by I.L.O. under the World Employment Programme. It is confined to coffee and tea plantations in India. It is well known that technological changes have important implication for employment and a study of this nature has obvious significance for the developing countries like India where poverty is ascribed largely to unemployment and underemployment.

The study starts off with a lucid exposition of the distinction between biological and mechanical technological processes. This distinction is important because the implecations for employment of labour differ in the two cases. The biological innovations on the whole do not tend to be labour substituting unlike the mechanical innovations. This observation should presage the kind of conclusions that the study is expected to throw up.

The study is confined to a given point of time and does not throw light on the impact of changing technology over time. However, it studies the impact on a cross section of the plantations selected on the basis of their size. Change in technology is indicated by the ratio between gross value of output per unit of labour. The plantations selected for the study are classified into three levels of technology on the basis of variations in this ratio. Three levels of technology are indicated, rather arbitrarily, as admitted by the author. The sample for tea plantations comprises 49 plantations out of a total registered number of nearly 13,000. The sample for coffee plantations is 42. There is no indication of the total number of coffee plantations from which this sample is drawn. It is stated that in view of the resource constraint it was not possible to go in for a larger sample. It is not very clear whether the sample is adequately representative.

The author has defined change in technology as getting the same amount of output by using less of the inputs. From this point of view, the study concentrates on the physical factor inputs—land, labour, intermediate material inputs and capital flow services at different levels of technology. It is found fairly conclusively that the input of each factor systematically declines as one moves from lower level of technology to the higher. It is also seen that this decline is independent of the size of plantations. Thus, size by itself is not a constraint for adoption of biological innovations. Another important conclusion is that policies affecting input prices are not likely to affect the change from lower level of technology to higher because relative prices of factors of production do not have any impact on such change. The crux of the problem is then: why do not all plantations move from the lower to the higher level? The answer is the absence of proper management and access to information. The smaller plantations can therefore be more effectively helped not by subsidising the prices of material inputs but by making available to them necessary technological know-how.

It is clear that as a result of change in technolo the factor inputs decline. But do all of them cha in the same proportion? It is very important to kn this because the main point of the study is the imp of technology on labour input. The application more inputs like fertlizers need not displace labo On the other hand, it may in all probability mo more output which may call for more employment labour. However, there can be substitution betwe labour and certain inputs of plant protection li weedicides. In fact, the study underlines the fa that there was generally a decline in labour inp per unit of land in respect of weeding as technolo improved. However, the subsequent increase in outp resulted in a substantial labour demand for plucki operations. On the whole, the conclusion is that t net effect of intermediate material inputs on emplo ment at each higher level of technology is positive.

There was yet another way the technology chan had a positive contribution. It was instrumental bringing about substantial increase in the incomes the workers. The average level of earnings particular in coffee plantations, even in the bigger ones, w lower than the poverty level. Thus technological chan which contributes to the raising of the living standar of the workers must be welcomed in the context the objective of poverty removal.

At the same time, another aspect of the questic must be noted. The proportion of value added to gro value of output progressively rose with the level technology. But the income levels of the non-wag earners increased faster than those of wage-earner This certainly meant more inequality as between th working class and the capitalist class. According t the author, this should not clash with the Plan objec tive of removal of poverty because what the Pla seeks to achieve is mainly the removal of absolu poverty. Thus the author does not wholly agre with the approach of the Planning Commissic that the twin causes of poverty are underdevelopme and inequality. He would rather have inequality in creased so long as it means reduction of absolu poverty.

On the whole, according to the study, technologic change in plantations had a positive effect on emplo ment. But there is the indirect effect still to be reck ned with. In estimating the indirect employment effe the author follows the Keynesian Multiplier Principl He himself does not seem to be happy with th approach but probably no better tool is available. Th Multiplier principle works through the sequence additional income—saving—investment—employme as well as through additional income—consumption-employment. No estimate for the former has bee provided as it was not possible to estimate th increase in savings or investment of the plante while savings on the part of workers is ruled out. A for the latter, additional incomes create demand fo more consumer goods and therefore more employmer to produce them. On the basis of assumed propensit to consume, the indirect effect on employment is esti mated and it is found to be quite significant. So th

total impact of technological change—direct and indirect—on employment is stated to be positive and significant.

The above findings are broadly true for both coffee and tea plantations. However, there were some variations.

The tea industry is well organised and dominated by large plantations unlike the coffee industry. Corporations own 85 per cent of the area under tea as contrasted with only 12 per cent in the case of coffee. What distinguishes a small tea planation from a high one is the capative processing facilities with the latter and also the inability of the small ones to employ a professional manager. The more fundamental problems of the small growers are of a technological and organisational character—the interior quality of planting material used, lower standards of cultural practices and an inefficient system of crop harvesting.

Tea plantation industry is rather more important than coffe plantations. They employ more than seven lakh persons as compared with just about 2 lakh persons employed in the coffee plantations. The issue of technolocial change and employment is therefore more crucial in the case of tea plantations. At the same time, it must be noted that labour in tea plantations is among the most organised in the country. It is also more skilled as tea harvesting requires more training and skill.

It is comforting that technological change would not displace labour in the two plantations. But this conclusion does not seem to have a wider relevance. They may share with the rest of agriculture, forestry, animal husbandry, etc. the fact that technological change, in their case, takes the form of biological innovation but the similarity seems to end here. In perspective, therefore, the utility of such a study is rather limited.

—M. R. Kulkarni

Rural Labour

Village Society and labour Use

by Biplab Dasgupta with poy Laishely Henry Lucas and Brian Mitchett (Village Studies Programme, University of Sussex, Brighton, Delhi, Oxford University Press) 1977, *pages : vii* 211 *Bibliography Index (Cloth) Price Rs.* 40/-

THE BOOK UNDER review is a study prepared for the International Labour Office, within the framework of the World Employment Programme, at the Institute of Development Studies, University of Sussex, Brighton. Using a huge set of data relating to 126 villages collected by the Agricultural Economic Research Centres in India which conducted village surveys, found that there is a close correspondence between the demographic and ecological characterstics of a village and its labour use pattern. Accordingly a typology of village secio-economic systems was developed based on various alternative uses of village labour time —such as work on the family farm, hired agricultural work, non-farm activities, work outside the village and leisure. It was also examined in this research monograph how far this typology provides a dynamic theory of rural labour utilisation.

Besides some technical paraphernelia like a very useful bibliography, index etc. the book contains five chapters, the first being an introductory one. The vast literature on labour utilisation in villages is surveyed in chapter 2 covering many Asian and African countries. The methodology is outlined in chapter 3. Chapters 4 and 5 present the result of the study in great detail.

Apart from several important conclusions that interest the technical reader for whom the study is mainly meant for, a few conclusions having policy. implications are as follows : First labour participation rate is relatively higher in villages where the degree of inequality is less and where most houheholds are engaged in family based subsistence farming. On the other hand, labour participation rate is less in villages with a higher degree of inequality (particularly because women, old people and children of the richer houses do not participate). Second, in general the rate of participation in the labour force is highly influenced by the participation rates of the women, children and the old. Further, commercialisation of agriculture resulting fall in the labour participation and a shift of labour from family-based to 'hired labour' based farming. Modernisation of agriculture does not necessarily reduce the demand for labour but adversely affects the participation of the village population in the work force—the same amount of work is now done by a smaller number of hired workers who work for longer hours.

This quantitiative research monograph forms one of the most important studies on rural labour in India. Unfortunately such a rich volume was photo-printed from a typed copy. which provides an uncomfortable reading.

Jandhyala B G Tilak

BOOKS RECEIVED

1. Aspects of Gold Policy

—S L N. Simha,
Published by Institute for Financial Management and Research, Madras.

2. Local Government its role in Development Administration

—V. G. Nandedkar,
Published by Concept Publishing Company, Delhi.

3. Public Administration

—Mohinder Singh, R. N. Sharma,
Published by Concept Publishing Company. Dtlhi.

4 The Politics of Panchayatraj Administration,

—Niranjan Pant,
Published by Concept Publishing Company, Delhi.

5. Administration of Justice in India

—T. K Mann,
Published by Concept Publishing Company. Delhi.

Development Notes

Increase in Power Generation

THE POWER generation in the country increased by 13 *per cent during the first nine months* of the financial year 1978-79. Except some shortage in certain pockets in the country the overall supply position made significant improvement. New generating capacity of 1717 MW had been commissioned by December 1978. While hydel generation had shown remarkable increase, the generation from thermal plants had also improved significantly Thermal generation in November and December 1978 was higher by 8 54 per cent. To investigate the major problems in the way to maximisation of power generation in elected thermal and hydel stations has been organised. To ensure the operation and maintenance procedures technical parameters of operational efficiency of the machines are being maintained and the constitution of a team of experts for roving monitoring of the plants has also been decided. □

Tractor Demand and Production up

DEMAND for and production of tractors has been on the increase. In 1977-78 as many as 40,946 tractors were sold and in the financial year 1978-79 the demand was estimated at 56,450 against the Planning Commission's demand projection of 42,000 At the end of 1978 there were four lakh tractors in the country. Demand for this farmers' friend is strong in northern India

In 1978, about 53,000 tractors were sold out of which 26 per cent were of less than 30 H.P. and 51 per cent of 30-39 H.P. At the present level of tractor production, India ranks fifth in the world for output and sales after the USSR, the USA, Germany, and France. □

Turnkey Projects Abroad-Big Money Spinners

INDIA earned Rs. 250 crore from turnkey projects abroad, in 1977-78. In addition there are *projects worth Rs. 675.42 crore in the pipeline.*

In Libya alone, India executed projects worth Rs. 600 crore. In December last a protocal was signed for the construction of 600 MW Zuara power station costing about Rs 500 crore. India executed projects most successfull also in other countries like Kuwait, the United Arab Emirates, Iraq, Nigeria, Tanzania, Mauritius, Thailand, and Malaysia.

The most important feature of these contracts is that our country has bagged them against stiff competition from the multinationals and the declared preference of the host countries for the sophisticated technology. Libya, Nigeria and some other countries approached India for the techno-economic feasibility surveys. We supplied know how for Nigeria's steel sector. □

More Export Contracts to PE

PROJECTS and Equipments Corporation, a sub diary of STC finalised export contracts wor Rs. 57 crore in the period April to January of t financial year 1978-79 : rise of more than 100 p *cent of Rs. 27 crore worth of contracts during t* same period in the preceding financial year. As result aggregate order booking stands at a staggerin figure of Rs. 100 crore.

The orders involved supply of rolling stock and wide range of other engineering items. PEC als undertook turnkey projects either independently o by working as sub-contracters The Corporatio secured orders from Vietnam, Sri Lanka, Uganda an Nigeria for over 1300 wagons and 136 coache *Further the Corporation already supplied* abou 250 passenger coaches, and over 600 freight cars t many countries including Taiwan, Zambia, Tanzani Bangladesh, Yugoslavia, the Philipines, Korea an Burma.

In developing countries, Indian railway equipmen is very popular which is evident from the larg number of repeat orders placed with PEC. In Januar 1979, it executed a repeat order for 30 passenge coaches to the Phillippines. Also the Corporatio shipped 66 hopper wagons to Bangladesh. A contrac for 34 coaches, was signed with Sri Lanka. □

Exports of Marine Products up

EXPORT of marine products during the period April—December, 1978 has shown an increase o nearly 20 per cent. The value of these export amounted to Rs. 143.75 crore as against Rs. 118 2 crore during the corresponding period of the period year. In terms of quantity the increase was com paratively lower from 41,074 tonnes to 47,019 tonne i e an increase of only 13 per cent Japan and Unite States, at present, account for nearly 90 per cent o our exports. Exports of marine products—mostl canned and frozen shrimp and frog leg—to EE countries nearly doubled from 2,842 tonnes in 197 to 5 121 tonnes in 1977. India's share in EEC coun tries imports of marine products, came to eight pe cent in terms of quantity and seven per cent of value. □

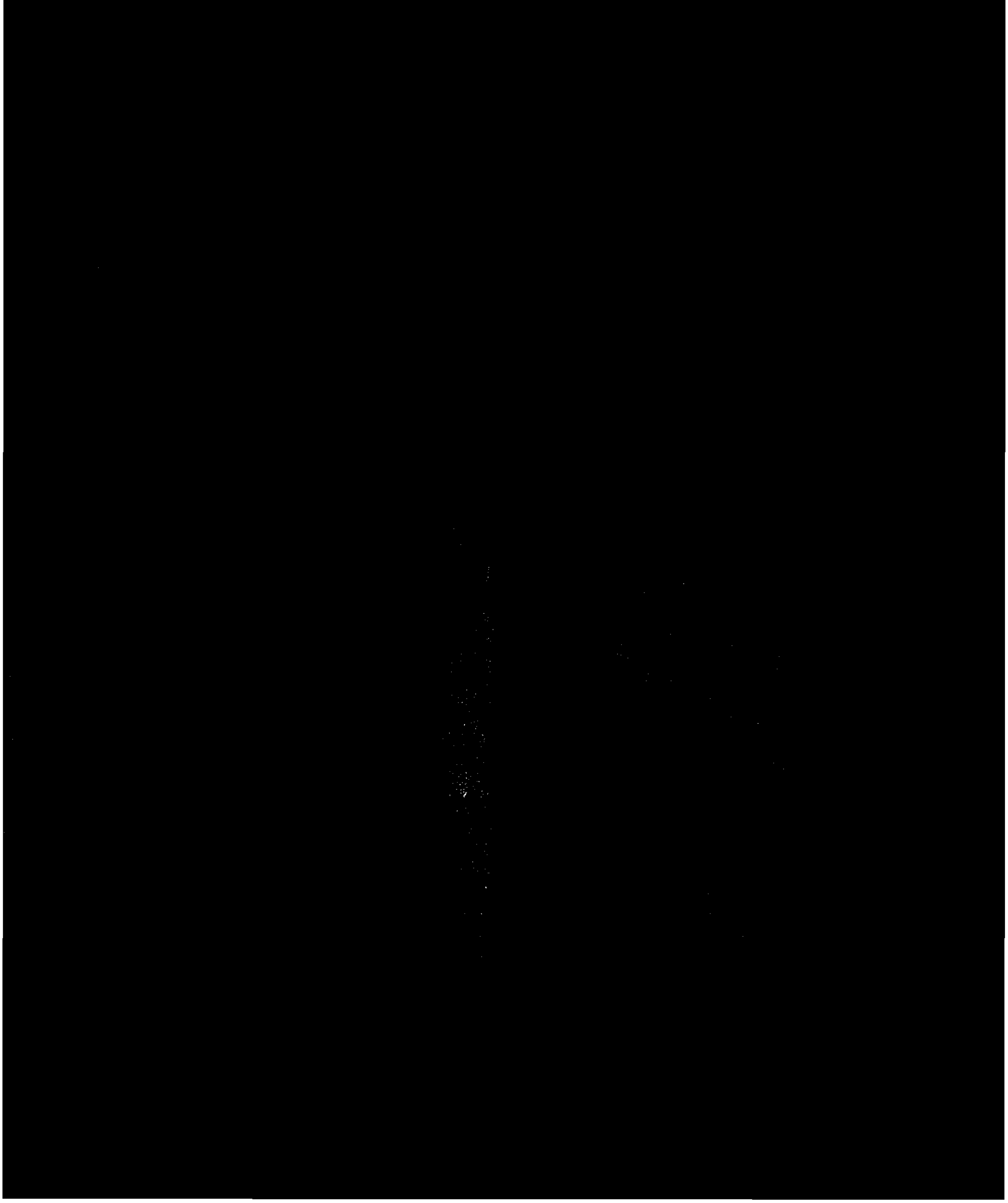
Trade with Thailand

BHARAT Heavy Electricals Limited (BHEL have secured an order for the export of thi big hydro-turbines of the capacity of 28.8 MW eac to Thailand for the Pattani project.

For the first 120 MW to be installed at the Tripol West power station in Libya, the firm has alread despatched the power material and equipment o similar quantum for the second set is in the advance stage of manufacture. □

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

yojana



OUR ACHIEVEMENTS

NBCC Bags Libyan Contract

THE NATIONAL Buildings Construction Corporation (NBCC) has bagged yet another prestigious contract in Libya costing Rs. 100 million (US dollars 14 million) for constructing utility services of a town ship complex of 1,000 houses at Beniwalid (Libya) These services include construction of road, st · water drainage, street lighting, sewage system and water supply as well as sewage treatment plants.

Mineral Output Up

Mineral production dur ng the year 1978 increased to work Rs. 1,447.9 crore against Rs. 1,415.3 crore in 1977 Among the metallic minerals the output of bauxite increased to 1.7 million tonnes from 1.5 million tonnes and that of Zinc to 66,000 tonnes from 46,000 tonnes. The production of apatite and phosphorite, in non-metalic minerals, increased by six per cent from 7.9 lakh tonnes to 7.81 lakh tonnes. Megnesite production also recorded an increase of four per cent.

The production of coal and lignite increased from 103.9 million tonnes to 105 2 million tonnes and that of petroleum (crude) to 11 3 million tonnes from 10.2 million tonnes.

Record Fertilizer Output

THE EXPANSION Plant of the Nangal Fertilizer Factory, a Unit of the National Fertilizers Limited, has achieved a new record of production by producing 1,102 tonnes of Urea against its rated capacity of 1,000 tonnes per day. This output is 19 tonnes more than the earlier record established a few days ago.

Moreover, the plant has been continuously producing more than its rated capacity for the last eight days which in itself is a new record This fuel-oil based plant, the first of its kind in the country, was declared a commercial unit only less than five months ago.

The other plant of the factory which produces Calcium Ammonium Nitrate (C AN.), popularly known as 'Kisan Khad' is also giving a good performance. The 18-year old plant has already exceeded its installed capacity seven times during the current months

Paper From Parthenium

The poisonous Parthenium weed can now be used in paper making. The economic usefulness of the hitherto health hazard weed was scientifically tried out by the Tamil Nadu Agricultural University, at Coimbatore. This innovation would help to set up small paper units, in rural areas and thereby would promote job-opportunities for the rural people.

For the prevention and cure of peptic ulcer, banana has been found to be of immense help Researches conducted at the Agra Medical College and the Banaras Hindu University have revealed this. The findings have been successfully experimented on animals and human beings.

It is also hoped that a special preparation of unripe banana or its active component may become available in the near future to cure peptic ulcer.

SAIL Earns Rs. 29 Crore Profit

THE STEEL Authority of India Limited (SAIL) earned a profit of Rs. 29.26 crore during 1977-78. Hindustan Steel Limited (HSL), a subsidiary of SAIL, comprising the Bhilai, Rourkela and Durgapur Steel Plants and Durgapur Alloy Steel Plant (ASP), earned a net profit of Rs. 46.78 crore till April, 1978. This included a profit of Rs. 39.76 crore made by Bhilai, Rs. 19.10 crore by Rourkela and Rs. 2.14 crore by the Durgapur Alloy Plants.

Metallurgical and Engineering Consultants (India) Limited (Mecon) registered a net profit of Rs. 214.53 lakh during the year as against Rs. 91.64 lakh in 1976-77.

While SAIL International earned a net profit of Rs. 4.41 crore, the profit of the Hindustan Steelwork Construction Ltd. (HSCL) is estimated at Rs. 0.14 crore.

Foreign exchange, worth about Rs. 156.98 crore was earned through the export of 7.36 lakh tonnes of steel products by the SAIL International. SAIL International also booked during 1977-78 contracts for the export of 40,000 tonnes of cold rolled sheets to the Soviet Union.

Textiles, Silk Exports Up.

EXPORTS of silk and man-made textiles during April 1978—February 1979 registered an all time record by crossing Rs. 70 crore.

Man-made textiles have shown remarkable growth with exports during the April—February period of the last financial year reaching Rs. 37.31 crore against Rs. 29 87 crore in April—February of 1977-78.

Silk exports during April 1978—January 1979 reached at Rs. 32.60 crore against Rs. 25.18 crore in the same period of 1977-78, showing an increase of nearly 39 per cent. In January, 1979 alone exoprts of silks amounted to Rs. 7.60 lakh sq. mtrs. valued at Rs. 2.85 crore, as compared to 8.67 lakh sq metrs. valued at Rs. 2.55 crore in January, 1978 Mulberry goods formed 76 5 per cent of the exports Exports of Mulberry silk in a ten-month period from April 1978 amounted to Rs. 28.15 crore and exports of tassar to Rs. 4.45 crore, as against Rs. 21.50 crore and Rs 3.68 crore respectively in the corresponding period of preceding year.

Fabrics accounted for 72 per cent of exports of man made textiles, while garments improved their share by 11 per cent last year to 19 per cent. The chief items were sarees, scarves, dress materials, carpets and ready-made garments. Man-made textile exports were chiefly directed to the U.K., the U S., Dubai, Singapore, Australia, Sudan, France, West Germany, Canada and Zambia, while leading buyers of silks were West Germany, the U.S., the U.K, Malaysia, Singapore, France and Switzerland.

Among silks, export of sarees increased from Rs. 24.54 crore to Rs. 27.17 crore, garments and made-ups from Rs. 3.16 crore to Rs. 7.23 crore, hosiery and knitwear from Rs. 0 27 crore to Rs. 0.64 crore and tyre cord/yarn from Rs. 0.69 crore to Rs. 1 94 crore.

Among silks, export of sarees increased from Rs 6.01 crore to Rs. 6.59 crore, dress materials from Rs. 3.82 crore or Rs. 5.65 crore, scarves and stoles from Rs. 5.63 crores to Rs. 5.83 crore, readymade garments from Rs. 2.06 crore to Rs. 4.19 crore and carpets from Rs. 3.18 crore to Rs. 4.66 crore. □

YOJANA

Volume XXIII Number 8

1 May 1979

11 Vaisakha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor ; P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :

AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S K Roy
HYDERABAD B. N Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM · Rosscote Krishna Pillai
Cover Design : P. K Sen Gupta
Photographic Officer · K S Nagaraj

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 **Telegraphic Address** : Yojana, New Delhi **Telephones** : 383655. 387910, 385481 (extensions 402 and 420) Circulation : Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs 42 Foreign Subscription : One Year—£ 2.70 or $5 00. Two Years—£ 4 50 or $9.00 Three Years—£ 6 30 or $ 12 50. Single Copy—£0.12 or $ 0.25.

Editorial

Appropriate Technology For Rural Development

SPECIALISTS in various disciplines may argue at length to ascertain what exactly the concept of appropriate technology cannotes but they invariably agree that the crores of people living in 5,75,936 villages of our country have little to choose beyond the confines of traditional technology passed on to them from generation to generation. The Council of Scientific and Industrial Research claims to have evolved 319 technological processes to help rural industries to grow. The potential users are, however, blissfully unware of these developments as is evident from the blank they have drawn on the Council's repository.

It would, however, be a mistake to suppose that the villagers are so conservative that they are not even conscious of their own interests. In their agricultural operations they have opted for fertilisers, insecticides, water for irrigation and seeds of high-yielding variety. They have proved their capacity to respond to change when it suits them. The requisite entrepreneurship in the field of rural industries, capable of making a choice for appropriate technology, is bound to emerge provided the technology opted for is rooted to local needs and resources and makes no violent breakaway from the past.

The basic problem of the rural poor is their failure to articulate the demands for minimum needs. There is as yet no agency to make a survey of their requirements for new technology to improve the quality of their life. Gone are the days of Mahatma Gandhi and his devoted band of disciples who would settle down in village homes and evolve techniques for better living fashioned out of the men and material aavilable in the area. It was appropriate technology with a difference. There was no imposition from an outside agency.

We have to follow the same model with suitable adjustments. In rural housing, for example, which should be both cheap and comfortable, there is no scope for cement, brick and mortar. The structure can stand on bamboos, wherever available, plastered with clay. The appropriate technology could be the manufacture of cementing material from paddy husk. The village roads can be made up of stabilized soil, a technique awaiting wide acceptance. For evolving an appropriate technology for rural development pilot projects in real life conditions will have to be undertaken after identifying the areas of work which will vary from State to State, Territory to Territory.

The potential user in the villages does not know at present what or whom he should look for while making a technological choice. Quite obviously there is need for a Directory which will be a compendium of information on appropriate technology for rural development, if possible, area-wise. As technological changes will slowly begin to transform the traditional tools and implements, a time is bound to come when there will be a demand for rural consultancy service which will bring to bear on the rural scene an expertise unique of its kind in a country determined to uplift the villagers from the abyss of destitution and suffering. □

DRAFT FIVE YEAR PLAN
1978-83

FORCES OF GROWTH

D. T. Lakdawala
Deputy Chairman, Planning Commission

A QUESTION THAT has been raised at the meeting of the Planning Commission with the social scientists, at the discussion on the Plan at the Indian *Economic Conference last year and several other* forums, is regarding the new elements in the Draft Plan, 1978-83, compared with the earlier Plans. The novelty can either be in the aims and objectives or in the strategy and methods. The nation has by now lived through five Plans, and the aims of planning have been discussed many times over by the best minds. It is hardly likely that at this stage of the nation's economic history, an entirely new aim acceptable to the nation could suddenly emerge. Planning is a serious affair in which one does not go in for novelties for their sake. The more rewarding exercise would be to rapidly evaluate our past experiences, see where we went wrong and change the emphasis in planning objectives so that our achievements become more relevant and significant. The Draft Plan exactly tries to do this. It emphasizes in an unmistakable way the imperative needs of tackling our problems of unemployment, poverty and basic weaknesses of economic and social infrastructure through its three principal objectives. The major goals of abolishing unemployment and serious under-employment, of creating an appreciable impact on the problem of poverty as manifest in family consumption of less than the needed calories in a period of ten years are clearly defined, and the distance to be covered in the first stage of the journey in 1978—83 is laid down. So also the progress to be made in fulfilment of minimum needs through provisions of public goods and services like adult education, elementary education, clean drinking water, health care, sites for the landless, improved public facilities for urban slums, rural roads and rural electrification is defined. All other objectives are given a subsidiary place. Three constraints are *mentioned, viz.* achievement of a higher growth rate than in the past, ensuring continued progress towards self reliance and moving towards significant reduction in income and wealth disparities, but these are almost implied in the fundamental goals. With its size and diverse regional conditions and with its attachment to democracy the degree of effort needed to lift two-fifth of the Indian population above the poverty line can hardly be forthcoming without a minimal per capita growth rate, and India in the past has been seldom above it. The stable environment and technological and economic conditions needed for the purpose can only be secured if we develop a spirit of innovation and adoptation and can discriminate which parts of technology and what processes we should borrow from abroad and which we should develop at home. We should adopt an international economic policy where we only allow imports and foreign capital as are in our long-term interests, and we are not unduly and permanently dependent on them. Our greatest disparities in income and wealth arise from our distinction between the poor and non-poor and our attack on poverty and unemployment will in itself constitute a great blow on the latter. A question is often asked of a trade-off between the needs of growth and equity. As I see the Indian situation, unemployment and poverty are two cankerous growths whose removal is a prerequisite for democratic existence. The right question, therefore, is how to attack these two, the pattern of growth that they necessitate, and the optimum growth rate feasible. It is in this context that the Draft Plan's estimate of 4.7 per cent growth rate becomes significant. In being reconciled to the lowest targetted

growth rate, it shows the greater value it attaches to goals other than the growth rate as well as its emphasis on realism. Even then, the targetted growth rate is much higher than that achieved and, therefore, its attainment needs careful thought.

Changes in objectives or emphasis on them need changes in strategy, but these must, if possible, be based on lessons of the past. The major errors which have hindered the progress of the economy in desired directions should be avoided, and promising ideas and experiments must be sympathetically examined to derive the utmost from them. In the course of our planning, we have made various important experiments in many spheres, specially so since the middle of the Fourth Plan, but we have not fully benefited from them and not pushed them through, perhaps because optical developments interferred with them. The strategy of the Draft Plan is so conceived that it avoids the errors of the past, which blocked the operation of growth forces, and tries to generate fresh growth forces which will give a new direction to the economy. In my opinion this should be the basic thrust of planning we may see some of them in detail beginning with the lurking dangers ahead that should be guarded against.

Prices, Food and Foreign Exchange

It has been clearly revealed on at least two occasions that there are strict limits to the price rise the Indian economy can absorb and beyond it grave discontent and unrest ensue. In developed countries the collective bargaining power of the wage and salary earners acts as an effective safeguard against the consequences of a rise in the consumers' price index on the masses. This coupled with their high standard of living makes people tolerant of price rises, even when they are not the result of wage and salary increases. A large part of the Indian populace is either self-employed with little bargaining power, or employed in the unorganised sector where money wages tend to lag behind price increases. This makes them sensitive to any substantial price rise. It will be recalled that in 1966-69, the five-year planning process had to be suspended and in 1974 a series of extraordinary economic measures were necessitated by price increases. The structural changes in the world and Indian economy make relative price adjustments possible largely through price rises only. In an economy where costs based on book value of capital determine many strategic prices, the needs for production expansion will dictate some price increases. But Indian public opinion has by now become as inflation sensitive as the German one, and in this obsession becomes oblivious of the equally great danger of falling prices. For this reason, all possible cost economies and improvements of marketing organisation to reduce price spreads will have to be explored. One will have to be very careful regarding the permissible degree of deficit financing and detailed fiscal, export-import and management policies. This explains why in spite of a comfortable food and foreign exchange position, an uncovered gap of only Rs. 2,226 crore is visualised in the Sixth Plan, exports of only surpluses of essential commodities are contemplated, and imports of necessary commodities in grave shortage are liberally permitted.

Another lesson that past events have emphasi is the role of agricultural commodities, especially fo grains in price changes. Where the supplies of former are reasonable, either due to domestic p duction or imports, substantial increases in mo supply have not resulted in a disturbing price r and vice versa. A policy of price stability mu therefore, concentrate on increased rate of growth agriculture in addition to a proper reserves and i port policy to meet annual supply fluctuations. high agricultural growth rate may also serve t other important purposes. It can make agricult more remunerative without a hike in the terms trade and sustain a high production level in ag processing industries. Allied industries like anir husbandry, farm forestry etc. can develop along w it. While the exact relations between agricultu growth and employment growth depends on the w in which such growth is brought about, the emplo ment effects are generally likely to be greater beca of its importance in the economy and its genera high labour intensity. The Draft Five Year Pl estimates a growth rate of 4 per cent in agricult compared with the historical trend of around 2 p cent. The third front of foreign exchange is fai secure now, and we have no immediate fears ; in fa we have a pressing problem of ensuring that we u annual foreign exchange earnings for productive i vestment. If need be, we can have more forei credit or loans. But the situation can change. Tl Plan, therefore, provides only for a use of Rs. 1,18 crore of exchange reserves.

Public Sector Investment

The second lesson that planning experience emph sizes is the stimulating role that public investment pla in the growth process. In public debate the priva and public sectors are often stylized as opposite force with more of one implying less of the other. If t economy were of a predetermined size, this would doubt be true ; and there are some sectors of larg scale industry like cement, paper and fertilizer indust etc. where this may hold good. In many spheres, ho ever, the public sector has supplied the basic infr structure or inputs required for the private sector. major irrigation, power, railways, roads and commu cation, the public sector has unrivalled sway. Pub investment in heavy electricals and engineering a basic chemicals has played a dynamic role in starti new lines of production. Because of these inter-co nections it has been found that where attempts a made to restrict public sector outlay, the demand f privately produced goods diminishes and private inve ment suffers. The three Annual Plans had this con quence. The Draft Plan contemplates a big increase public investment outlay of nearly 75 per cent to ens that the forces of economic growth gather a n momentum.

There is, however, a reverse complementary relati ship between the two that must not be lost sight The public sector investment not only has backw but also forward linkages with the private sector, cluding agriculture and small industries. Its produ must be in demand from the private sector. In absence, there will be large stocks of public sec products as happened during 1975, when the appar full capacity working of public sector enterprises co only be secured by ignoring the demand side, wh would sooner or later call the whole process to h

This is a reflection of the present division of work between the private and public sectors, and a radical change in it can change the relationship. In view of the complementary relationship, the importance of planning private investment is obvious. The Draft Plan carefully weighs the needs of the public and private sectors in the light of the broad division of work between the two, and assigns higher role to public investment than the Fifth Plan. (vide Table I).

While public sector investment can be directly decided by the planners with reference to the targets of production, an increase in private investment and its distribution among desired sectors have to be brought about through provision of facilities, suitable changes in economic climate, proper controls and inducements, and careful dovetailing of savings with investment channels. One favourable development during the last year has been the removal of fear of demand recession. No longer is any wide group of industries complaining of demand bottlenecks. It is the difficulties in getting raw materials, intermediate products, and infrastructure facilities that are being voiced. In the Draft Plan, irrigation, transport, coal, and power are provided on adequate scale. For the unorganised sector where the major additional problems are of marketing of products and difficulties in getting information and access to improved methods of production and results of research, extension work on a much wider scale will be attempted, and marketing facilities will be provided. In the industrial field, District Industries' Centre will play a pivotal role.

the unorganised sector. On the industrial [illegible] has been a sharp dualism between the [illegible] large-scale industry, banking and insurance on [illegible] hand and the tiny and rural industries and [illegible] agriculture with village money-lenders and indi[illegible] bankers on the other. Access to factor and commodi[illegible] markets, to credit, knowledge, capacity to comman[illegible] research abilities and garner its fruits, and ability t[illegible] crate or change demand for one's own products var[illegible] widely between them. The modern sector finds it pro[illegible] fitable to use highly capital-intensive techniques t[illegible] produce varied sophisticated products and the unorganis[illegible] ed sector consisting mostly of self-employed person[illegible] uses labour-intensive antiquated techniques of produc[illegible] tion mostly to produce goods for which there is need[illegible] Education, health, transport, communications, and othe[illegible] economic and social services are all unevenly divide[illegible] between the rural and urban areas and the poor and th[illegible] rich. It is this wide gap that should be filled in at th[illegible] earliest, so that a fruitful productive inter-connectio[illegible] is established between the two. An earnest attempt i[illegible] made in the Draft Plan to judge all activities an[illegible] efforts from the focal viewpoint of building bridges bet[illegible] ween the two. The programme of the Minimum Revise[illegible] Needs, which is mentioned as one of the major ob[illegible] jectives of the Plan, is devised with this viewpoint. I[illegible] aims at a minimum degree of educational and healt[illegible] standards for everyone through supplementing compul[illegible] sory primary education with informal and adult educa[illegible] cation and our district and city hospitals with a syste[illegible] of community health workers along with referr[illegible]

Table I

Public and Private Investment in different Plans

(*Rs. crore at current prices*)

Period	Public Sector	Private Sector	Total	Percentage of (2) to (4)
(1)	(2)	(3)	(4)	(5)
First Plan	1794	3614	5408	33.1[illegible]
Second Plan	4403	5724	10127	43.4[illegible]
Third Plan	7965	8780	16745	47.5[illegible]
Fourth Plan	16159	24516	40675	39.7[illegible]
Fifth Plan (1974—78)	27293	37055	64348	42.41
Sixth Plan	59130*	46860	105990	55.7[illegible]

*Excluding Inventories

Source : CSO's National Accounts Statistics

NOTE :—Errors and omissions adjusted between public and private sectors on prorata basis.

Widening of Market

One major reason for the periodical slowing down of the growth rate especially on the industrial side after the Third Plan has been the restricted Indian market. Due to the low purchasing power of the masses and the extremely fragmented and scattered nature of the market both in space and time, demand has not expanded on a scale large enough to make continuous increased production possible and profitable. In a sense this malaise has been a symptom of a wider disease—the inability of the Indian people to participate in the increasing productive process which development throws up and on which it feeds. Indian economic development has hitherto been confined to a small sector, largely the organised section and its periphery in services.

The entire plan allocations must be read in the lig[illegible] of this basic need. Large and medium industry gets [illegible] small increase ; the sectors getting more than 100 p[illegible] cent increase are agriculture, irrigation, power a[illegible] village industries. As compared with 37.5 per cent [illegible] the Fifth Plan, 43 per cent of the public sector outl[illegible] will be allocated to rural development. While high[illegible] education gets absolutely less funds for its expansio[illegible] elementary education obtains more than double, a[illegible] adult education gets manifold. In tele-communicatio[illegible] and urban development, greater attention will be p[illegible] to smaller towns where the links between agricultu[illegible] and industry and small industry and large industry [illegible] the closest. Science and technology will be broug[illegible] more and more to the service of the common ma[illegible]

1 DPD/79—2

A large part of the unorganised sector is in private hands, and public outlay to help it will be only by way of infrastructure, or needed grants and seed money The investment in this sector will largely come from individual and family savings, banks and special financial institutions. No detailed estimates of sectorwise private investment and bank credit have been attempted yet. But in the final Plan it is hoped to carry out some of these exercises. In the meantime, the ARDC credit targets, the investment targets of the REC, rural credit: deposit ratio targetted for banks, and the credit allocations prescribed for priority sectors all go to show that the needed financial help will be given to them.

Planning and Employment

In the course of our Plan experiments to solve the the pressing problems of employment, we have launched on various programmes. Many of these programmes have been reviewed and evaluated by the Programme Evaluation Oraganisation of the Planning Commission. The study of the crash schemes for rural employment has brought out that in spite of many defects like lack of agency for survey and execution of local works without help of contractors the programme had a welcome impact, though of a very limited nature. For example, 40.3 per cent of the households contacted participated in the programme, the average number of days of employment per participant household was 101.6, and agricultural labour and scheduled tribes benefited most, the weaker sectors getting five times as much per capita employment as others. The preferred type of works was roads which was to be given the last priority. Of all the special employment programmes for the educated, creation of jobs by the Government (64.6 per cent) was the least interesting and self-employment the most (32.1). 40.8 per cent of those trained for entrepreneurship set up self-employment units. One job cost Rs 9,692 ; the entrepreneur found nearly 13 per cent by way of seed money. The (varied widely from one State to another, being highest in Haryana at Rs. 1.6 lakh and the lo Rs. 2,084 in Assam.

Other studies on public works for employment b out that there are great differences between the nur of persons who declare themselves as available for v in a survey or register themselves and those actually turn up when work is offered. This ma due to some misunderstanding of the original pur of the inquiry, or because of lack of clarity regar the nature of work likely to be offered or the dist at which the work is offered even though within same district, or simply due to the difference in resp to a hypothetical situation and an actual one. Wh person is offered employment, he may be found wi to work only on his own land or in his own occupa or in the village in which he stays and may not to cut himself off from the environment. Public w built with the help of such people have to be i their village, or short duration, capable of absorl changing number of manpower in different season, not skill-intensive. To be of any long-term value, tl must have been taken off a shelf of public works wh costs and benefits have been worked in advance, there is hardly a long list of such works anywh Most of these works have not created any source permanent employment so that they have to conti ad infinitum. Maharashtra experience where this w is offered at piece-rate without a minimum fall-b time wage rate shows that a large number never enough work to get the full day's wage (vide Table I Presumably, they do not work full time. In poo regions there may be fuller employment as a result, where low wages are the result of poverty, these co have little indirect impact on abolition of poverty. Wl nobody can rule out the need in the final instance devising employment-creating projects which result productive assets, it would be much better and m

Table II

Block-wise No. of workers as per wages earned per day at selected works
(For October, 1976 or for latest months)

S. No.	Taluka/Block	Re. 1/- to Rs. 2/-		Rs. 2/- to Rs. 3/-		Rs. 3/- to Rs. 4/-		Rs. 4/- to Rs. 5/-		Above Rs. 5/-		To	
		No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Perce
	Category I												
	Georai	498	12.1	1574	38.2	1499	36.4	453	11.0	96	2.3	4120	1
	Category II												
	Baglan	..	..	..	..	31	100 00	..	..	..	..	31	1
	Category III												
	Baglan; Kalwan; Bharshi; Karmala; Georai and Ambejogai . . .	754	8.8	4952	57.8	2494	29.1	192	2.2	170	2.1	8562	1
	Category VII :												
	Ambejogai . . .	15	10.79	124	89.21	..	.	..	..	..	..	39	1
	Category VIII :												
	Barshi; Saholi	..	.	61	100	..	.	..	..	..	..	61	1
	Category IX ;												
	Baglan; Kalwan; Ambejogai	..	..	928	98 7	9	1.0	..	..	0.3	0.3	940	1
	TOTAL	1267	9.15	7639	55.14	4033	29.11	645	4.66	269	1.49	13853	1

SOURCE : Joint Evaluation of Employment Guarantee Scheme of Maharashtra by PEO (Planning Commissi and Dept. of Economics and Statistics, Govt. of Maharashtra) (Page 126).

efficient to link up plan programmes and employment, to ensure that employment is productive.

The PIREP Review brought out clearly the limitations of special employment programmes. The local agencies contemplated to put them through cannot operate large construction programmes meant to provide permanent employment and thus siphon persons off the land, this will have to be done by the State Government, and be co-ordinated with area planning. The works would largely employ unskilled people and hence not pay higher wages than minimum. This limitation also flew from the fact that they were aimed at providing jobs to those who could not find employment. Upgrading of skills, better marketing, etc. could only be done by an integrated rural development programme. They could, however, usefully aid planning through supplementary works largely seasonal and small with low material-expenses ratio employing seasonally persons who could not get work elsewhere at minimum wages.

The Draft Plan makes an attempt to do so by its shift in favour of growth of agriculture and allied industries, rural and small industries, public construction works to meet minimum needs and generally speaking, less capital intensive processes. It estimates that 49 million man-years of job opportunities will be created in this process. There are some general points in this connection that need clarification and discussion. In the first place, there is no desire to create employment which does not produce goods and services of value to the society. Devices like less hours of work or more men to do the same work are out of question. Such redistributive devices may have a role to play in dealing with the problems of the underemployed in developed countries, but do not contribute to the solution of similar problems in developing countries. On the other hand, devices which produce less per employed labourer because less capital aids him, may be defensible in a capital-scarce economy, where hitherto owing to institutional factors capital along with technology and other factors in scarce supply has been concentrated on the organised sector. There is a strong case for redistribution and more productive deployment of investment which may result in fall in productivity of sectors which may now have less capital per labourer. All improvements which increase labour productivity without demanding more capital should be welcome. It is in this spirit that farm mechanisation which replaces labour will be strictly regulated and allowed only in cases where labour scarcity in a region or at a particular time cannot be removed by organised labour mobility. Farmers with small holdings use less capital intensive methods, and produce more per unit of land. They need encouragement. Fiscal devices and regulation are contemplated to be used to promote rural and small industries, but where they produce goods for the masses, their use will be confined to fields where differences in costs are not likely to be high and efforts must be made to dispense with them as early as possible. It must be emphasised that the essential stress of the Plan is not on village or rural self-sufficiency. It is our firm belief that the road to fuller employment and prosperity lies only in the establishment of an organic link between the village and the town. Studies of industrial estates meant for the dispersal of industry have shown that they only thrive on the basis of a market, which is generally outside the place of location. In a way these are export-based This is becoming truer even of some cottage and rural industries. The strengthening of many of them like woollen carpet or tasser-silk industries depends on the success in linking them up with the demand in towns and cities. Quality control, training of artisans and product sophistication have all to be done with this viewpoint. Commercial crops and activities allied to agriculture like dairying and poultry depend on urban markets. The greater stress on agriculture and rural industries is only a historical necessity to spread wider the benefits of technology and modernization; they are in no sense a reactionary reversal away from beneficial modernisation as evident from the greater growth of industry compared with that of agriculture in the Plan the sharp increases in the production and capacity targets of certain large-scale industries and power, and the larger industrial input in agriculture.

Realising that the problems of small farmers and other weaker sectors needed attention, agencies were specially set up to deal with them. Inspite of lack of clarity in concept delay in identification of beneficiaries, absence of detailed planning, frequent transfer of officials and lack of extension staff, the programme had some results. The loans given under SFDA and MFAL conferred more benefit on small farmers than marginal farmers and agricultural labour, but the commercial banks could not be persuaded to actively participate. The most successful programmes pertained to distribution of input and minor irrigation, including digging of wells (vide Table III). The increases in income as percentage of loans was attractive. (Vide Table IV).

The rural works, however, provded only 34.2 days of employment to a small number of workers, 2 per cent of agricultural workers and marginal farmers were provided with work.

Command Area Development programme was started in the Fifth Five Year Plan. By the end of March 1978, 38 Command Area Development Authorities covering about 14 million hectares were set up. While no assessment in quantitative terms of the benefits accruing from the efforts made so far has been made, vide Table V is indicative of the achievements in some of the projects and the great promises that lie ahead. No similar information is available in DPAP, but the experiences of all these have been used in the Integrated Rural Development Strategy.

Block-level Planning

An additional growth factor is area planning at the district and block-level. While this is a part and parcel of the wider reform of decentralisation and brings the advantages of local participation, local supervision, local insights and additional resource mobilisation, from the economic viewpoint there will be an additional considerable benefit. It is essential in this connection to read the Dantwala Committee Report on Block-level Planning together with the Asoka Mehta Report on Panchayati Raj. Hitherto, problems have been looked at from the macro-viewpoint, largely central, partly State and in one or two States very recently from the district viewpoint. The emphasis on district and block-level planning will mean a better assessment of the natura land manpower resources and of local potential. While certain major decisions will continue to be taken at the Central and State level, their impact on the local economy can be assessed and the utmost advantage can be taken of Central and State programmes at the local level. To the extent decisions are taken by lower authorities or local initiative, they can be so adjusted as to lead to the optimum exploitation of natural resources and best use of

Table III

Number of beneficiaries under various schemes

	SFDAs		MEALs		Total	
I. Minor Irrigation :	**1,00,520**	**(19.6)**	**8,579**	**(3.0)**	**1,09,099**	(13
(i) Dugwells/Renovation of Wells	40,411	(40.2)	5,271	(61.4)	45,682	(4
(ii) Tubewells	21,792	(21.7)	146	(1.7)	21,938	(2(
(iii) Installation of pumpsets	13,176	(13.1)	1,112	(13.0)	14,288	(1.
(iv) Wells with pumpsets						
(v) Community irrigation	8,879	(8.8)	1,672	(19.5)	10,551	(
(vi) Other Minor Irrigation works	16,262	(16.2)	378	(4.4)	16,640	(15
II. Agricultural Programmes :	**3,71,965**	**(72.4)**	**2,11,142**	**(73.0)**	**5,83,107**	(7
(i) Supply of Inputs	3,13,775	(84.4)	1,78,910	(84.7)	4,92,685	(84
(ii) Demonstrations	10,250	(2.8)	2,420	(1.2)	12,670	(2
(iii) Supply of Bullocks and Bullcok Carts	7,349	(2.0)	2,190	(1.0)	9,539	(1
(iv) Agricultural Implements	18,395	(5.0)	3,570	(1.7)	21,965	(3.
(v) Customs Service	3,858	(1.0)	2,455	(1.2)	6,313	(1
(vi) Horticulture	9,280	(2.5)	20,341	(9.6)	29,621	(5
(vii) Land Development and Soil Conser-vations	4,609	(1.2)	875	(0.4)	5,484	(0
(viii) Storage/Grain Bins	4,449	(1.1)	381	(0.2)	4,830	(0
III. Subsidiary Occupations :	**31,486**	**(6.1)**	**20,678**	**(7.1)**	**52,164**	(6
(i) Dairying	24,396	(77.5)	12,366	(59.8)	36,762	(70
(ii) Poultry	2,452	(7.8)	1,570	(7.6)	4,022	(7
(iii) Sheep Rearing	3,091	(9.8)	5,339	(25.8)	8,430	(16
(iv) Goat Rearing	1,255	(3.9)	703	(3.4)	1,928	(3
(v) Sheep and Goat Rearing	..		22	(0.1)	22	(0
(vi) Piggery	195	(0.6)	22	(0.1)	217	(0
(vii) Fishery	..		656	(3.2)	656	(1
(viii) Duck Rearing	6	(0.0)*	..		6	(0.
(ix) Sericulture	121	(0.4)	..		121	(0
IV. Rural Works Programmes :	9,781	(1.9)	48,833	(16.9)	58,614	(7
GRAND TOTAL :	**5,13,752**	**(100.0)**	**2,89,232**	**(100.0)**	**8,02,984**	**(100**

(Figures in brackets are percentages to grand total in the case of main groups and of total of main grou in respect of sub-groups).

*Negligible.

SOURCE : Report on Evaluation Study of Small Farmers, Marginal Farmers and Agricultural Labourers P jects, 1974-75—P.E.O., Planning Commission. P. 93.

Table IV

Average loan advanced and net increase income per beneficiary (Rs.)

	Loan (Rs.)			Income (Rs.)			Income as %age of loa		
	SFDA	MFAL	ALL PRO-JECTS	SFDA	MFAL	ALL PRO-JECTS	SFDA	MFAL	ALI PR(JEC
Dugwell	3281	3251	3269	1819	1211	1517	55.4	37.3	4
Tubewell	4062	..	4062	1744	..	1744	42.9	..	4.
Pumpset	2937	4083	3223	813	984	855	27.7	24.1	2(
Other Minor Irrigation	1549	2800	1656	3690	2038	3548	238.2	72.8	21
All Minor Irrigation	3411	3876	3518	1871	994	1670	54.9	25.6	4
Dairying	1848	1805	1830	787	884	829	42.8	49.0	4
Sheep Rearing	1641	1484	1537	1006	—676	—104	61.3	—45.6	—(
Goat Rearing	515	473	511	192	..	192	37.2	..	3

SOURCE : Report on Evaluation Study of Small Farmers, Marginal Farmers and Agricultural Labourers Projec 1974-75—PEC Planning Commission. Pp. 123-4 & 126; Pp. 233-5 and 238.

local manpower. After a full perception of possibilities of labour training and migration, if the unemployment problem still threatens to be acute, additional productive local public works can be thought of .This will change the employment perspective. It has been agreed to that the policy should so work that by March 1981 in 1000 blocks there will be full employment. For the first time realising the great inherent limitations of bureaucracy, an idea has been mooted of systematically associating voluntary agencies with block-level planning and its implementation. A Committee under the Chaimanship of Shri Sivaraman, Member, Planning Commission, was appointed to work out its modalities. It has recommended that 100 blocks may be given to voluntary agencies in the first instance. This is a small beginning but if it works out in the way it is expected to, it will have a very welcome impact. Another major change that has come about is the emergence of able grounds of scientists, technicians, and managers who are interested in rural development and bring their scientific outlook to the rural problems. An effort has been made to evoke their corporation on a wider basis through bringing in big houses to adopt villages

Backward Area and Communities

The greaer emphasis on unorganised sector and micro-level planning will automatically imply a better share for backward communities and areas. A gratifying feature to note is that some States lagging behind in irrigation are fast trying to make up. Expenditure on irrigation (including flood control and minor irrigation) in 1978-79 showed an increase of 155 per cent over 1974-75, but States like Andhra Pradesh, Assam and Orissa have multiplied it three-fold or more. It is estmated that in 1979-80, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra and W Bengal will increase investment in irrigation much faster than average. In addition some special steps are contemplated to help them. In the last Plan, a big effort was made to accelerate development of certain backward areas and weaker groups so as to bring them within the mainstream of development. A tribal sub-plan is the most notable instance of these. This approach had a three-fold advantage. (a) It is likely that because of their weak organisation and bargaining strength, tribal areas did not get a proper share in State development plans. The Tribal Sub-Plan draws pointedly the State's attention to the share given to tribal areas in divisible plan expenditure. (b) The Tribal Sub-Plan enables the Centre to have a direct voice and interest in the development plan of the tribal areas by adding some funds of its own (c) Much more important, the special problems of the areas like the need for co-operative societies to ensure credit on fair terms and proper terms of trade, the type of activities which can be fostered in hill and forest areas etc. receive specific attention The approach has just got under way now It is hoped to extend this approach by having a special tribal component plan for each Central Department, where possible The tribal population covered by the Approach will be increased. Plans for hill areas on similar lines are being strengthened.

The Scheduled castes do not lend themselves to this area approach, as they do not live in separate areas but the liberal facilities for them by way of scholarships, job reservation and opportunities for self-employment through Scheduled Caste Development Corporations are being extended. The Central Departments and State Governments are pursuaded to have a special component in their plans for them, wherever feasible. In addition, in selection of blocks for block-level planning, preference will be given to those where they form 20 per cent or more. In all concessions, arrangements will be made to see that they get their proper share.

There are many other backward areas apart from tribal areas and hill areas within States. Some of these are co-terminous with States, where it has been our policy to give liberal assistance so to give more per capita plan outlay and assistance. This policy is being actively pursued; per capita plan assistance in 1978-79 to them was Rs. 149 as against Rs. 41 in Gadgil-formula States. As a proportion of Plan outlay, central assistance contributed 88 per cent in these States compared with 40 per cent in Gadgil-formula States. As against 20 6 per cent in 1974—79, nearly thirty per cent of plan assistance given to States has been reserved for them in 1979—83 In the Gadgil formula of plan assistance, 10 per cent was reserved for poorer States with per capita income below all-India average, but it was sometimes more than counter-balanced by other components like tax effort. At the last NDC meeting it was decided to give poorer areas a larger amount of assistance, nearly one-third of plan assistance will be distributed according to IATP formula which will give poorer States more than the Gadgil formula. It will enable them to fully benefit from large number of the centrally sponsored schemes on sharing basis like drinking water, adult education, community health workers, block level planning etc.

But the problem of backward areas is not one of finances only. Hitherto, while centrally sponsored rural biased schemes like DPAP have helped certain agriculturally backward areas more, the only major diagnosis of backwardness made has been in terms of industrial backwardness, and some tax concessions and subsidies have been given by the Central Government and certain credit concessions by all-India financial institutions for establishment of new industrial units in "backward" areas. This has not yielded desirable results. The industries that have come up have not been related to the problems of backward areas where they are located They have not added appreciably to local employment, nor had any backward or forward linkages effects on local economy via purchases of input or sale of output. The larger stress in the Draft Plan on agriculture and allowed activities and cottage and small industries will, to some extent, help their development Institutional and back finance will be given new directions with this aim It is hoped that block-level planning will bring precisely the obstacles, especially infra-structure facilities hindering their development to the forefront and take care of some. A National Committee on the development of Backward Areas has been formed to look systematically into the problem of backward areas, and supply the missing links to their solution.

Institutional Changes

At this stage, important questions are raised by institutionalists, who believe that without a radical change in institutions, neither the unemployment nor

the poverty problems can be solved ; and the plan to be worthwhile should provide for these. There is much truth in this view. Only I should like to emphasize that the needs of the unorganised masses are very different from those of the organised workers who can easily fight through their trade unions for security and better terms of service. For the self-employed, what really can help is such institutional changes which will increase his capacity to produce more and better in the first instance and his bargaining capacity to get a fair deal. For both these, he has to be helped to form suitable organisations by voluntary agencies or declassed intellectuals. A number of such institutional changes are in offing. All-India support prices have already been fixed for a large number of agricultural commodities, and in case of rice and wheat, which are available through public distribution system the market prices are not much different so that holding capacity does not confer any substantial benefit. In case of others like pulses, oilseeds and commercial crops, market prices may go much above support prices, but the latter are so fixed as to be remunerative. In some cases, public bodies like central cotton corporations are instructed to purchase even above the support price. The major practical problem is the effective organisation of purchases at important regulated markets so as to make support price effective even when there are pressures of supply on the market. It must further be pointed out that a farmer is free to sell at higher than support price if he can find a seller, so that the support price system gives him one additional alternative of the last resort. Seasonal price fluctuations in agricultural commodities can be reduced if central purchasing organisations are allowed greater discretion in prices at which they purchase, but in view of the possibly large adverse repercussions of any errors in judgement and difficulties in distinguishing between seasonal and long-term price trends these powers have to be very selectively given. Producers' cooperative organisations can greatly help in this direction without being subject to the same degree of risk

A producer is in the above discussion presumed to be free to sell his commodities to any purchaser. Where he is in debt, the lender may, as a means of being sure of return of loan as well as getting more than fair terms of trade, make it a precondition that he should have the right of purchase. This difficulty can only be got over if there are alternative institutional channels of credit. These are being built up. The All-India Debt and Investment Survey carried out by the Reserve Bank of India revealed that the share of moneylenders had come down from 60.8 per cent in 1961 to 38.7 per cent in 1971 and institutional credit had enhanced it significance from 17.25 per cent to 28.9 per cent. In the intervening period, institutional share must have further increased. Of the agricultural credit given by scheduled banks, one-third goes to weaker sectors (with holdings of less than 5 crore) and efforts will be made to increase it. In rural banks, 93 per cent of the advance are to smaller men. An Agricultural Credit Intensive Development Scheme has been instituted in 41 districts, where it is hoped to ensure that none will be denied an agricultural loan because he cannot offer a security. Similar efforts are also made to strengthen channels of input distribution Cooperatives distributed 60 per cent of fertilizers in 1975-76; their share will go up to 65 per cent soon.

A large number of institutional changes in various spheres have taken place, but their impact is lost because of lack of focus or coordination. An instance of the nature of integrated attack that is essential a the degree of flexibility that must be shown is evid in the way problems like bonded labour have to tackled. It is now recognised that the real proble of bonded labour emanate from the obligation of borrower to sell his labour power to the creditor. T abolition of bonded labour removes this obligat but the creditor—debtor relationship puts the deb at a disadvantage so that the next logical step is cancel the debt. But the released borrower-labou is at a disadvantage. Investigations have revealed tl bonded labour may not be worse off than other f labour in the same places in terms of wage remune tion. Anyway, it becomes more difficult for the fre labourer to get work with an employer. He must the fore be given some assets, land, milch animals e and some credit to start his business. Banks genera advance money only to cover business cost if the ent preneur bears a part; but in this case he cannot, a there are some consumption expenses incurred befc the first fruits become available. Credit has, therefo to be given without cover and even for consumptic There are various schemes in operation in which large part of the seed money or the entire one is a vanced by the State and for specific schemes ev maintenance credit is given for the time lag betwe investment and the first fruits. Of course, state knowledge about these schemes and their impleme tation leave much to be desired; the potential for the extension needs to be explored.

Land relations are a vital issue in India and a fee ing seems to be around that no laws are implemente This is a mistaken impression. In the first instanc Zamindari abolition has been completed and has in number of tracts freed cultivators from the illegal e actions and extortions and conferred on them distin benefits terms of their rights to land and enjoyme of the fruits of their labour. The principles of land the tiller, and security of tenure and reasonable rer for other tenants have been forcefully enunciated, b the right to resumption of land by the owner wl wants to cultivate it has been widely wrongly invo ed. Absence of proper record of land rights in sor States has in any case made their efficiency doubtfi The success with which they have been applied th differs from State to State. Land ceiling legislatic and especially the latest changes in it, has been dif cult to implement. The land located as surplus h fallen much below expectations and land resettl much less; but steps are being taken to help Stat to speed up actions by removing all judicial hurdl in quick implementation. An overall review made Dr. Vyas shows that as a result of the legal, demogr phic and market forces, the hegemony of large lan holders is challenged, and ownership too. Structure h become less skewed though a different strategy is r quired to enable small and marginal farmers to cons lidate their gains.

There is a basic limitation in the Indian conte which must be accepted India is a vast country many regions with diverse needs and different te peraments. It is wedded to democracy and individu freedom With a very large number of self-employ persons, agriculture including much of plantatio rural industry and small industry tend to be entirely the private sector A system of mixed economy therefore, suited to it. In view of this direct cont over the production of goods and services is imp fect. It has been asked how in such an econo

Table V

Gains from C.A.D. Projects

Name of the Project	Crop	Yield per hectare	
		Earlier (round 1974-75)	Now (1976-77)
Pochampad Project (Andhra Pradesh)	Maize	10.37 quintals	33.97 quintals
	Paddy	22.28 „	34.63 „
Left Canal Command of Nagarjuna Project (Andhra Pradesh)	Paddy	27.91 „	37.47 „
Gandak Project (U.P.)	Paddy	10.25 „	16.90 „
	Wheat	14.70 „	19.50 „
Chambal (Rajasthan)	Paddy	20.49 „	36.06 „
	Jowar	4.39 „	6.63 „
	Sugarcane	408 „	594 „
Tungabhadara Project (Karnataka)	Cereals	0.5 tonnes	1.8 tonnes
	Pulses	0.3 „	1.1 „
	Oilseeds	0.1 „	2.1 „
	Cotton	0.35 „	3.0 „

where effective demand decides the product mix and the techniques of production, the State can have a voice in regulating these in social interest. It must be admitted that planning under a mixed economy has to operate in a different fashion from that in a socialist economy, and the methods have to be less direct and coercise. But the modern State has a large armoury of instruments—persuasion, monetary and fiscal weapons, detailed controls, legislative changes and executive rules and institutional changes—through which it can have an effective say in the final decisions. Use of these instruments is a skillful job, which requires clarity in the detailed goals that are to be pursued, patient collection and analysis of data and flexibility in adoption of means to ends. The results may not be quick, but can nevertheless be substantial and lasting. Planning in India has not suffered from lack of State powers. It is more a problem of will to use them, of detailed knowledge of methods and of persistence with the techniques to get the necessary results.

That brings us to the alleged dominance of propertied classes and their ability to use all laws, rules and institutions to their own advantage. Past experience reveals that even cooperative institutions and government organisations have been so utilised. Vested interests with their experience and influence over all avenues of power will no doubt attempt to manipulate all instruments to their advantage. There can be only one remedy for this. Institutions have to be so built and transformed under various legal requirements and safeguards popular democratic pressures and enlightened public opinion, that they serve the masses. National conventions of publicity have to be built up and those affected and interested have to be vigilant. These are very different processes, from those under a proletarian dictatorship; but they are not entirely barren of results. Some gains have been already won in this manner, and under our circumstances, these methods alone are available.

Technical changes

In the fight against poverty, besides institutional changes, two major significant points should be noted. Land is our rarest asset and beyond a point no amount of land redistribution can secure it for every one. The right way would, therefore, be to increase its productivity through means which are plentiful or which we have not hitherto intensively used. Labour is plentiful, and any techniques which use more of labour with less of land should be welcome. Secondly, water management has, hitherto, left much to be desired both in areas where perennial irrigation is available leading to water-logging etc. and in dry land where every drop of water has to be used in the best possible way and moisture has to be conserved Fortunately, with modern means of cultivation a small piece of land is quite enough to lift a family above poverty level if he has

access to modern inputs, knowledge and credit. Small ponds of brackish water can with new methods of fish-breeding sustain a household. Artificial cow insemination can make keeping of two-three milch animals a paying proposition if infrastructure for veterinary services, milk collection etc. is created. Even a land-less labour given a small plot of land can get enough grass to feed the cows, or some colective arrangements for grass growing can be made. The introduction of fodder-tree concept by Sadguru Sava Trust is a telling instance. None of these is easy and necessary facilities exist only in few places. But low-cost techniques holding such promises are on the horizon and have been tried. There is no strong reason why given a suitable environment, these cannot be speeded up and multiplied. Therein lies our major hope.

I have enumerated above the growth forces that the Draft Sixth Plan seeks to engender and strengthen. I must, however, caution that it would be facile to hope that they will automatically operate in the expe[cted] way. Even when these represent tried experiments, results known have been less than satisfactory and aspects have not been fully studied. We do not [have] yet a detailed analysis either of the way our tribal Plans operate or of our liberal policy regarding non-Gadgil formula States. Where new ideas are [con]cerned, naturally our knowledge is very imper[fect]. Careful monitoring will, therefore, be essential to [know] how these forces work and to so modify our deta[iled] policies from time to time that they work in the des[ired] direction. With the shift to decentralisaion and wea[ker] sectors, our hopes essentially lie with the way the [un]organised sectors respond to the new opportunities, the consciousness they imbibe of the likely proble[ms,] difficulties and dangers. And yet our lines of comm[u]nication with them have to be established, and an [un]derstanding arrived at. It is only on the fulfilment [of] this condition that the growth forces can work pow[er]fully and speedily. ☐

APPENDIX

Stress on Employment in Plans

Among the four principal objectives of the *Second Five Year Plan*, "a large expansion of employment opportunities" was listed as one. The Plan further emphasised that in addition to the determination of the optimum scale of investment in which employment would be a major consideration, the problem needed to be broken up in terms of sectors, regions and classes. Diversification of the industrial pattern, a suitable policy on location of industries, special measures to assist small scale and cottage industries, maintenance of economic activity continuously at high levels, provision of adequate training facilities, measures to promote geographical and occupational mobility of labour, all these must be considered as elements in the programme of creating new employment on the requisite scale. The Plan recognised that while from the economic as well as from the large social viewpoint, expansion of employment opportuinties was an objective claiming high priority, it stressed the fact that over a period, the volume of employment grows only as the supply of tools and equipment on the one hand and of the wage goods on which the incomes of the newly employed come to be spent, is expanded.

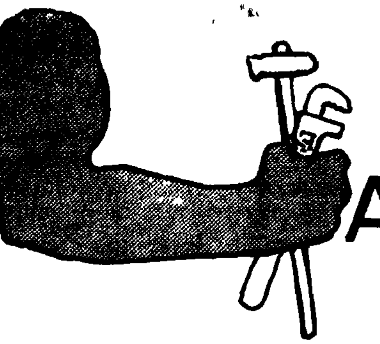
The Third Five Year Plan did not specifically mention creation of employment opportunities as one of the major objectives of the Plan. However, under the objectives of 'equal opportunities' and 'progress towards socialism', creation of employment opportunities is emphasied and development along socialistic lines was intended to secure rapid economic growth, expansion of employment, reduction of disparities in income and wealth, prevention of concentration of economic power. It was recognised that the first condition of securing equality of opportunities and achieving a national minimum is assurance of gainful employment for every one who seeks work. Additional opportunities for work were contemplated to enable the lowest income groups to earn enough through productive employment to meet their minimum needs. In the course of the Third Plan, it was also proposed to introduce a scheme of employment assistance for industrial w[or]kers and to make a small start with relief and as[sis]tance for destitute persons orphans and physic[ally] handicapped persons without means of support [or] livelihood.

The *Fourth* Five Year Plan reiterated the socia[l] objectives mentioned in the Third Five Year Plan un[der] its "Approach and Policy" Chapter. It recogni[sed] creation of more employment opportunities in [the] rural and urban sectors on an increasing scale as [a] major objective of the Planning process. In rural are[as] this was proposed to be done through labour intens[ive] schemes such as minor irrigation, soil conservatio[n,] ayacut and special area development and priva[te] house building etc. and provision of institutional finan[ce] for rural development. In the urban areas the volu[me] of employment was to be determined largely throu[gh] employment in the manufacturing industry, the publ[ic] sector investments in industry and minerals, in tran[s]port and communications and in power. Additionall[y] as a consequence of increased tempo of agricultur[al] and industrial activity, large employment was expec[t]ed in the tertiary sector, particularly in road transpor[t].

The *Fifth* Five Year Plan document published [in] 1976 did not clearly indicate the objectives of th[e] Plan. It nevertheless recognised the problem of emp[loyment] as a matter of vital concern to the planne[rs] and policy makers. From the point of view of devis[ing] an appropriate strategy and employment polic[y] it recognised three inter-related aspects which need t[o] be borne in mind. The first emphasised the need fo[r] implementing a programme using the strategic fo[r] employment in the Plan such as irrigation, agricultura[l] extension involving the use of high yielding varieti[es] etc., the second related to the fact that aspects of rur[al] employment generation should be inter-woven with [the] local development strategy, and the third, the mos[t] important aspect related to the creation of a secur[e] rural tenantry and a productive small farmer bas[e] by means of tenancy reform.

Based on S V. Desai Memorial lecture at Ahmedabad on 24 March, 1979.

BETTER DEAL FOR LABOUR



Sreelekha Basu
Director, Man Power Planning, Planning Commission

ARTICLE 43 of Indian Constitution envisages that State shall endeavour to secure by suitable legislation or economic organisation or in any other way, to all workers, agricultural, industrial or otherwise, work, a living wage, conditions of work ensuring a decent standard of life and full enjoyment of leisure and social and cultural opportunities and, in particular, the State shall endeavour to promote cottage industries on an individual or cooperative basis in rural areas". The policies and programmes formulated by the Government are directed towards implementing these ideals and objectives in a phased manner. The primary objective of all our developmental plans has been to achieve implementation of these obligations, recognised by our Constitution, and wider coverage of labour, in organised as well as in unorganised sectors, and promote harmonious relations between labour and management and regulate wages and other conditions of work. The Government also conducts evaluatory studies on the implementation of labour laws, with a view to ensure speedy implementation of labour laws, awards, codes of discipline, agreements etc. Since independence, the national policy of "better deal for labour", has brought about considerable improvement in the living and working conditions of workers, specially among organised workers.

However, most of these measures have limited coverage and are confined to the needs of the urban wage earning labour, in the organised sector. The statutory measures are more or less inoperative in the unorganised sector of our economy. A very large section of the labour engaged in the rural secor is virtually left out of most of our labour welfare measures. However, the successive Plans, specially the current five-year Plan, have been aiming to extend the coverage of these labour welfare measures to the rural and urban informal workers in a phased manner, with the help of direct as well as indirect approaches, such as providing them their minimum needs and offering them some gainful occupation with the help of employment programme and area development plans. The approach in the current Plan is to provide necessary vigilance to ensure that the benefits of various laws, policies and schemes designed to help workers in rural areas, produce the intended effect. The success of all these laws, policies and programme would mainly depend on the consciousness of the people for whom these are intended. The Government is examining the possibility of extending minimum wages legislation to the unorganised sector, with a view to provide security of employment and income to this group. Attempts have also been initiated to provide some basic social security benefits to the workers in rural areas in the urban informal sectors.

Greater emphasis is being placed on the organisation of rural workers, on improving empoyment opportunities for women and removing discriminations against them in the matter of wages, sorting out the problems of bonded and child labour and improvement of employment prospects of the back ward classes. A comprehensive law on industrial relations has been drafted to replace the existing legal arrangements, with a view to promote industrial harmony in the country. Schemes have also been chalked out for participation of workers in decision making and management, at different levels. It is expected that an "incomes, wages and prices policy" would be introduced in course of this plan period to minimise the disparities in wages and incomes between and within workers in differenct sectors of the economy.

It is worthwhile to concentrate mainly our observations on better deal for labour, for workers in the organised industrial and related sectors, who are now governed by various Acts like the Payment of Wages Act (and also the Minimum Wages Act), Industrial Disputes Act, Employees' Provident Fund Act and Bonus Scheme Act, Workmen's Compensation Act, Employees' State Insurance Act, Maternity Benefit Act, etc. They cover about ten per cent of our total labour force, compared to 73 per cent in agriculture. The National Commission on Labour had very rightly remarked that "Industrial worker of today has acquired a dignity not known to their predecessor". He shares all the benefits of a welfare state and enjoys a measure of social security. He has the bargaining power and his wages are protected. His social consciousness and aspirations have changed, along with his attitude towards work and his employer. The Government has been trying to do its bit in improving his welfare in various ways. Some of these measures are interesting for discussion.

Wage Boards

In the organised sector, wage boards are looking after wage fixation, since 1957. It is a tripartite body consisting of representatives of employees and workers, an economist, a consumer's representative and a chairman, all three independent. Wage Boards have been set up for almost all the industries, during the last 22 years. Their approach has generally been to determine the minimum wage for an unskilled worker and then build upon it a structure of differentials. Wage Boards usually attempt at fixing of wages with the broad framework of the Government's economic and social policy. Mostly Wage Boards are non-statutory, and as such, their recommendations are implemented through the good offices of Central or State industrial relations machinery. Government obtains periodic progress reports indicating the extent of implementation of the recommendations from the concerned authorities. Non-implementation of Wage Board recommendation is referred to tribunals. The wage structure recommended for an industry usually remains in operation for five years. There has been a feeling that "the establishment of Wage Boards has neither reduced tension nor introduced any scientific element into the wage structure". Workers' organisations feel that where unions are well established and recognised, wage fixation should be through collective bargaining, specially because the boards take a long time to bring out their recommendations. The National Commission on Labour (NCL), however, feels that on the whole Wage Boards have served a useful purpose, and should function essentially as a machinery for collective bargaining and should also strive for unanimity. The machinery for the protection of wages in the organised sector was set up by a legislation, specially designed to protect wages earned by workers, known as the Payment of Wages Act (1936). The Act now provides protection to persons receiving wages (or salaries), below Rs. 1000 per month, and a proposal to raise this limit to Rs. 1600 per month, is now under consideration. It also permits certain deductions from wages for fine, house rent, income-tax, provident fund, etc. This Act is administered by State Governments, with a few exceptions such as railways, mines, air transport services etc., where it is enforced by the Centre. This Act has brought about a number of benefits to the working class, by enforcing timely payment of wages/salaries and discontinuation of unauthorised deductions from wages of workers, by the employers. However, in the absence of an effective implementing machinery, workers in small-scale and unorganised industries are still being exploited. This is specially noticed in case of women and child labour, mostly engaged in agriculture and informal sectors.

Minimum Wages Act

The Minimum Wages Legislation was first introduced in India in 1948. This Act aims at preventing exploitation of workers in "scheduled employments" by fixing the minimum rates of wages. It also provides for fixation and revision of minimum rates of wages, fixation of hours of work, payments of overtime wages, besides providing penalties for offences under the Act and Rules made thereunder. All the State Governments and Union Territories have framed their minimum wages rules. Currently this schedule covers workers in almost all industries, mines and services, and also workers engaged in various unskill[ed] jobs. The total number of employments cover[ed] under the Act for which minimum wage rates ha[ve] been fixed/revised is more than 500. Legislation w[as] also enacted in 1976 to provide for equal remuner[a]tion for men and women workers, for the same wo[rk] or work of a similar nature and for the preventi[on] of discrimination against women in the matter of re[c]ruitment. Enforcement of the Act now has been e[x]tended to a number of employments. Steps have be[en] taken for better enforcement of the Mininmum Wag[es] Act, in the various scheduled employments. Rates [of] wages fixed under the Mininmum Wages Act are bei[ng] continuously reviewed and revisions carried out whe[n]ever they are due.

Dearness Allowance and Consumer Price Index

Adjustment in the existing wage levels for the wor[k]ing class and others are made regularly, for increa[se] in their cost of living with the help of consumer pri[ce] index numbers. The Consumer Price Index Numbe[r] for the working class, compiled by the Labour Burea[u] are used by the Government and Private Sector Org[a]nisations for regulating the dearness allowance paid [to] thousands of manual workers and other employees, [to] neutralise the increase in prices. Recently, Rath Com[]mittee was appointed by the Government to go in[to] various aspects of this index (base—1971). The ma[in] revision recommended by the Rath Committee includ[e] extension of the coverage of workers to all manu[al] workers in establishments other than factories, mine[s] and plantations, (i.e. ports and docks, electrici[ty] generating and distributing units, public transpo[rt] undertakings and railways), utilisation of ration pric[e] for compilation of index based on actual off-take an[d] not on the admissible quantity, compilation of fres[h] house-rent index, and various other technical impro[]vements, as also improvement in the price collectin[g] machinery. The Rath Committee also recommen[]ded that Labour Bureau should organise seminars o[f] trade union workers in each State and preferably i[n] individual centres, at least once in a year, to explai[n] the methods of data collection, compilation of inde[x] etc., with the help of indices relating to that centr[e] to clarify workers' doubts and entertain their sugge[s]tions. This would create wide appreciation of th[e] index and also better relations, betwen the workers o[r]ganisations and the Labour Bureau, "which has bee[n] the Achilles heel of the index number problem i[n] recent years".

Social Security Schemes

Though there has not yet been a separate soci[al] security plan as a sectoral component of our develo[p]ment plans, a measure of social security content [is] built-in in many sectoral programmes. For the organi[s]ed labour, these schemes are mostly administered b[y] the Ministry of Labour. The Social Security Schem[e] for organised labour covers medical care benefit sic[k]ness benefit, employment injury benefit, old-age an[d] death benefits, lay-off and retrenchment compensatio[n] benefits, etc. These do not feature under Plan scheme[s] but they are constantly reviewed and monitored by th[e] Labour Ministry and usually tripartite boards and tru[s]tees regularly review the schemes. Expert Committe[es] are also set up to go into specific aspects of the scheme and modifications suggested by these Committees a[re] kept in view while amending the relevant Acts, fro[m] time to time. Employees' State Insurance Schem[e] (ESI), involves plan outlays. The coverage of ESI h[as] gradually been extended to smaller factories and th[e]

Scheme now covers some 60 lakh people. Other improvements effected in ESI relate to extension of duration of sickness benefit, increase in the payment of disablement benefit and dependent benefit and in pension, and certain other facilities. Some non-plan contribution from the Government is also involved in Deposit Linked Insurance Scheme and in Family Pension Scheme, which were initiated by amending Employers' Provident Fund and Misc. Provisions Act, and the Coal Mines Provident Fund and Misc. Provisions Act. These two schemes are meant to provide extra benefits to the family members of a worker in the event of his death. The first scheme also serves as an incentive for the worker to conserve his savings in his Provident Fund account, while the second pools risks and finances. Employees Provident Fund Scheme covers about 160 industries (classes of establishments) and the number of subscribers are about a million now. Several measures which had been introduced for the promotion of safety in industry and mines, are now being strengthened and expanded, under the current plan measures.

Bonus

The principles on which bonus to industrial workers should be assessed has been a controversy for a long time. A Tripartite Commission, popularly known as Bonus Commission, was set up in December 1961, to consider in detail the question of payment of bonus based on profits. On the basis of the report and keeping in view suggesions received from different parties, a statutory minimum bonus of 8.33 per cent of the annual wage was introduced in September, 1972, by the payment of Bonus Act. In pursuance of the recommendations made in the final report of the Bonus Review Committee, the Payment of Bonus (Amendment) Ordinance was promulgated in September, 1975, and various revisions were incorporated. A limit of 20 per cent was imposed on the bonus payable, where the payment of bonus would be linked to production/productivity, in lieu of bonus based on profits. However the minimum bonus enjoyed by workers was withdrawn during the emergency. The present Government restored the minimum bonus of 8.33 per cent, subject to the existing provisions in the Bonus Act which empower the Government to protect marginal and sick units. However, it was felt that the rationale for a deferred wage and the concept of bonus unrelated to profits or productivity have to be viewed in the light of an integrated policy on wages, incomes and prices. Requests from workers and trade unions for various amendments of the 1965 Bonus Act, viz., for extension of the Act, changes in the formula for computation of bonus, conversion of a part of the Bonus (or the whole) to retirement benefits, unemployment relief, etc. have been received by the Government. It is intended that all these proposals would be studied closely, and consultations with the interested group would be held before introducing permanent changes in the Bonus Act.

Workers Participation in Management

In the Draft Five Year Plan (1978—83), the need to provide for the participaion of workers in the management of the undertaking has been recognised and formulation of a comprehensive scheme has been proposed for the participation of workers in decision making and management at different levls, viz. shop level, plant level and corporate level.

The Tripartite Labour Conference held in May, 1977, had discussed in detail the conceptual and practical issues involved in the existing schemes of workers' participation in management in mining and [illegible] turing industries, and recommended [illegible] committee consisting of representatives of the [illegible] Organisations of employers and Trade Unions, [illegible] Governments and some professional institutions, [illegible] study in depth, all the issues relating to workers' participation in management and in equity capital, and recommend the outline of a comprehensive law on Industrial Relations. The Report of the Committee was submitted to the Government and the 30th Session of the Labour Ministers' Conference held on 7th November, 1977, discussed the Report and there was a vide measure of unanimity on various issues. The Industrial Relations Bill has now been introduced in the Parliament. The measures recommended include among others setting up of a Gratuity Fund, protection of office bearers of trade unions, improvement in service condiions relating to lay-offs, retrenchment etc., right to strikes (and lock-outs) in non-essential services, with proper notice and after a ballot (in the case of strikes) etc.

Training Schemes

The Central and State Governments administer on-the-job training schemes and industrial training programmes, in their Craftsmen Training and Labour Welfare Sector. These include (i) training instructors, officers and executives with the help of refresher courses, (ii) training foremen and supervisors from the industry, and also skilled craftsmen and technicians sponsored by various industries in highly skilled areas such as tool designing, tool and die-making, heat treatment, advanced welding etc., based on the specific needs of industries, and (iii) shop-floor training, and various other courses. Apprenticeship training is imparted in 103 trades, designated under the Apprenticeship Act, in selected industrial establishment, and in 356 recognised Industrial Training Institutes (ITIs), and also in 61 non-official Institutes. The Labour Ministry appointed a Committee of Experts in Training (popularly known as Quadir Committee), in April, 1978, to examine in depth the quality of training imparted in various establishments and to suggest remedial measures for improving the quality of training. The Report of the Committee has been received and is now under consideration.

Workers Education

Central Board for Workers' Education, an agency under the Labour Ministry, trains workers in techniques of trade unionism and brings consciousness amongst the workers about their rights and responsibilities. Some 60,000 worker teachers and about 30 lakh workers have so far been trained under this programme. A Review Committee had studied the impact of the programme and recommended some measures for improvement and extension.

The current Plan has provided for wider coverage of in-service training for workers at various levels, to enhance their upward mobility. Craftsmen training programmes, training of skilled workers and technicians as well as employment information and placement systems are being re-structured and strengthened. Diversification of training programmes for apprentice-ship courses has already been introduced to meet the manpower demand of our industries.

Child and Woman Labour

India has the second largest child population in the world. According to ILO, India also has the highest

number of child labour. Information on child labour is far from satisfactory. The estimated number of children in labour force stood at 16.5 million on 31st March, 1973, recording an increase of about a million over two years. The Second Rural Labour Enquiry (1974-75), has thrown light on an interesting feature viz., the children worked for more days in a year, as compared to women labourers, in both agricultural households and in rural labour households, not only in wages|salary employment, but also in self-employment. Child labour in the organised sector is not significant, mainly due to age bars. They are mostly employed in agriculture, cottage and small industries and various types of services. Our Constitution provides for protection of child workers and there are a number of legislative provisions relating to their minimum age of employment, maximum working hours and apprenticeship. The Plan (1978—83) is making special provisions for preventing exploitation of child labour and for implementing the programme of universal primary education. A Working Group of experts is now looking into the various problems involved in child labour and will recommend ways and means to sort out the issues, as it is more an economic problem than a labour issue.

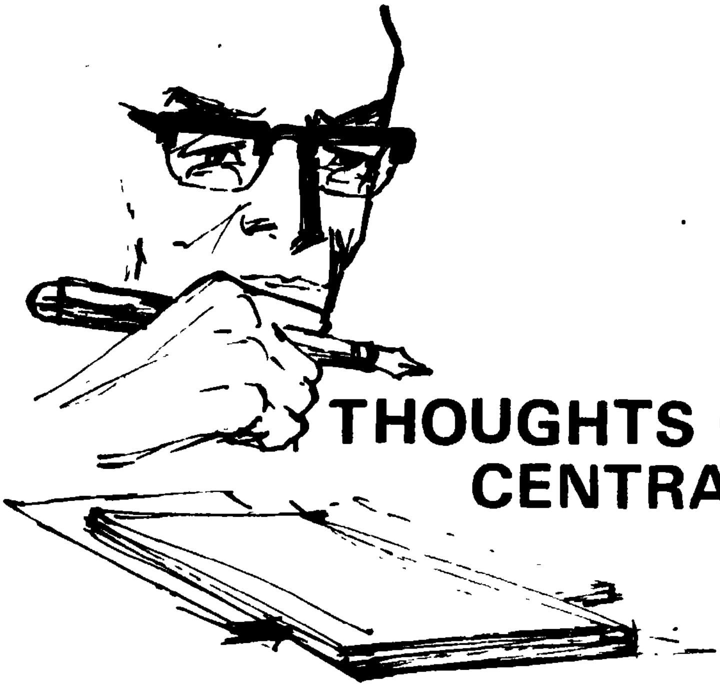
The current Plan feels that "the nation is committed to a steady improvement in the status of women, and one of the most important means would be to secure for them a fair share of employment opportunities". Work-force participation rate of women has been falling steadily over a long period. However, the number of women workers in modern industries has recorded a significant rise over the last decade. Legislative provisions for the protection of women workers include equal pay for equal work, maternity benefits, prohibition on night and underground work, etc. Special training schemes are now being taken up to promote female wage/salary employment and self-employment. Schemes are also being chalked out to improve employment opportunities for women and to remove all discriminations against them in the matter of wages and selection. Women workers are also being encouraged to participate in organisational work to safe-guard their own interest.

Suggestions

Since independence, a new status has been given to the working class, mainly those in the modern sector, and many developmental programmes and welfare schemes have been specially undertaken for them, special legislations enacted to improve upon their living and working conditions, and social security services have been introduced for the industrial workers, most of which have not parcolated to the workers in the informal sectors. Organised labour are currently enjoying certain special benefits and are economically far better off than their counterparts in the unorganised sector. Industrial labour in the organised sector are better-off than their counterparts in most traditional organised sectors. However, it is important to have a set of distribution statistics on income, consumption and asset formation of various groups of workers under different ownership, to analyse the impact of these measures, for policy formulation concerning economic welfare of the people. The present availability of statistics for the measurement of levels of living is rather poor. Recorded data on the distribution of social consumption also leave much to be desired. Various welfare measures taken up by the Government and by employers in factories, mines, and at plantations, are not properly quantified and no information on their distributional aspect are maintained by the employers. Neither our organised labour nor the industrial labour are homogenous groups. Relative shares of wages and imputed values of benefits received by them would perhaps bring out a few distinct target groups amongst the organised/industrial labour, for whom separate policy measures would be necessary. We cannot go by the statistics on the industrial labour as a whole, to arrive at an overall observation that they have a better deal now than three decades ago. The different constituent groups will have to be studied separately, their demands and needs analysed and necessary changes introduced through policy intervention. "Working poor", mainly unskilled workers employed in manufacturing, mining and in plantation would have to be discriminated against their better-off counterparts and special benefits provided for them. Besides, policies and measures originally designed to benefit one target group may adversely affect other groups, and in course of time the income-linkages may in turn have adverse effect on the target group itself.

The welfare impacts of any measure have to be examined in detail, with time perspective, and its costs and utility have to be properly evaluated. The industrial labour has the power of collective bargaining. Their wages and other benefits are protected by law. This has created hopes and expectations among other workers, who are not yet fully absorbed in the main stream of planning. The proposed intervention of the planners and policy makers, to influence the sectoral balance will have direct impact on the welfare of these workers as various measures are designed to achieve some specific distributional objectives. In the current Plan, our labour policy would endeavour to increase opportunities of employment, reduce disparities and ensure that the benefits of development reach the poor, by providing basic minimum needs. □

The industrial labour has the power of collective bargaining. Their wages and other benefits are protected by law. This has created hopes and expectations among other workers, who are not yet fully absorbed in the main stream of planning. The proposed intervention of the planners and policy makers, to influence the sectoral balance will have direct impact on the welfare of these workers as various measures are designed to achieve some specific distributional objectives.



THOUGHTS ON CENTRAL BUDGET

Dr. V.K.R.V. Rao

Shri K.K. Birla

Prof. C. John

Prof. D.A.R. Subramanyam

Shri Amar Nath Dutta

Prof. Y.M. Patel

A NOTABLE BUDGET

V. K. R. V. Rao
Economist

THE UNION BUDGET for 1979-80 presented by Mr. Charan Singh is a notable one in the history of Union budgets for the following reasons :

1. The largest uncovered deficit.
2. Largest mobilisation of resources through additional taxation.
3. Largest tax relief to agricultural producers.

The Deputy Prime Minister, who is also the Finance Minister, has placed three objectives behind his tax proposals in addition to the revenue objctives. These are :

1. Reduction in disparties in income and wealth.
2. Increasing production.
3. Eliminating underemployment and unemployment not only by increasing agricultural production but also by encouraging labour intensive techniques and also by improving the competitive capacity of small scale and cottage units in relation to large scale units.

Now, the points that can be proposed to consider, are :

1. To what extent will it tend to have inflationary consequences ?
2. To what extent does it improve the distributional pattern not only by reducing income and wealth in the upper levels but also by increasing the incomes of the people below the poverty line ?
3. To what extent is it likely to increase production, both agricultural and industrial ?
4. To what extent is it likely to reduce unemployment and under-employment ?

Inflationary Trend

As regards the first question, the magnitude of the uncovered deficit should normally count as an inflationary factor, especially as it follows the large uncovered deficit of Rs. 1590 crores including the clearance of State overdrafts of 1978-79. The fact that the large deficit of 1978-79 and the accompanying massive increase in the volume of money has not brought about a significant rise in prices is a favourable factor; and so is the large stocks of foodgrains and the large foreign exchange balances that can be used to supplement domestic supplies through imports. Both these factors operated in 1978-79 and are expected to do so again in 1979-80.

Unfavourable Factors

As against this, following are the unfavourable factors : Inward remittances of foreign exchange have started decelerating in their growth, while exports are failing to increase against the massive increase that is taking place in imports. This may not effect the situation in 1979-80, but is bound to do so in subsequent years, and thus weaken the anti-inflation armoury in the hands of Government.

The vast increase in liquidity resulting from two successive massive deficits is an inflationary potential that is bound to grow in strength over time and become an active menace as soon as the supply situation either in agricultural or industrial production deve any signs of shortages. In spite of the fact that have had a substantial increase in agricultural proc tion during the last 2 to 3 years a part of whic undoubtedly due to the extension of irrigation and increased use of chemical fertilisers, the fact still mains that agriculture is dependent on the vagarie monsoons. We have to take into account the pro bility of a set back in monsoon conditions if not year, very possibly during the next year. If t happens, while existing stocks can be used to reli acute distress, the psychological effect is bound to unfavourable. If that happens, then the inflation potential we have built up may get activated. We c not build up a strategy of development on def financing on the assumption of continual good mons conditions over the future.

The increased taxation which have been imposed the 1979-80 budget does not fall only on the upp income groups. The increased customs duty on edi oil imports, increased customs and excise duty residual items not covered by specific categories, creased duty on kerosene and the effects of the creased duty on motor-spirit, high-speed diesel a commercial vehicles on public transport costs and t increased railway freight charges on goods traffic, a all bound to fall on the common man, and along w their multiplier effects bring about a rise in cost of l ing indices. The consumer cost of living indices ha already risen in 1978-79, and if a further raise follo in 1979-80, it is likely to generate a cost-push inflati that can tend to take a spiral form in view of the exce sive money supply brought about by 2 years of defi financing.

On balance of all these considerations, it is inclin to think that the budget for 1979-80 will have an i lationary effect on the economy.

As regards the 2nd question about the effect of t budget on distributional pattern, there is no dou that it will help to reduce the disposable incomes upper income classes by its raise in the sur-charge personal incomes and corporate incomes, its aboliti of the concessions on capital gains given last year, reduction in tax concessions on long-term savings abo Rs. 5,000 and its increase in the net wealth tax slabs above Rs. 10 lakh. This by itself however not going to add to the incomes of the people bel the poverty line, who consist mostly of agricultu labourers, marginal farmers, rural artisans and urb poor. Any improvement in the condition of the peo below the poverty line will depend much more on wh is done to increase their employment opportuniti their productive capacities, and their levels of wag and earnings. The only direct way in which the t system can help to better the conditions of the poor the extent to which it gives direct relief by way of t concessions to the people below the poverty line eith on their consumption or on their production.

The budget has levied extra imports on commodities directly consumed by people below poverty line such as kerosene, edible oils and transport costs. Concessions given on production goods used in the agricultural sector such as chemical fertiliser and light diesel oil will benefit by and large only the areas which have assured water supply; and even in these areas, the benefits are likely to accrue much more to the medium and large farmers and perhaps also to the small farmers, and that is unlikely to benefit marginal farmers and the agricultural labourers, who form the core of the rural poor. In fact the distributional pattern in rural areas which has already been adversely affected by the success of the green revolution is likely to be worsened by the budgetary concessions which are specifically intended to give further impetus to the green revolution. In the absence of structural changes in the land ownership and productive assets in the rural areas, these concessions are bound to make the rural rich richer while it may or may not make the rural poor less poor. Therefore, the fear is that the effect of the budgetary levies and concessions on eliminating poverty in the rural areas and bettering the conditions of the rural poor is not likely to be of any significant order of magnitude.

As regards the effects that the proposed taxes, levies and concessions will have on production and through increased production on reducing under-employment and un-employment, it is difficult to assess them in categorical terms. Increased irrigation and increased availability of power for operating irrigation will undoubtedly help to increase agricultural production, but whether any massive tax concession on chemical fertilisers will help to increase their consumption over and above the trend increase shown in their consumption without these tax concessions is a much more doubtful question. The massive increase which took place in fertiliser consumption in 1978-79 was in the context of the unrevised excise duty and the increase in the area under irrigation. It appears most unlikely that there will be any substantial net increase in fertiliser consumption as a result of the tax concession which will take it above the trend line of the increase with the unrevised excise duty and the net increase in the area under irrigation. If this contention is correct, the tax concession given is really of the nature of a massive transfer of income to the agricultural producers using fertilisers without necessarily making them use more than they would otherwise have done, and this transfer would accrue to a large extent to the agricultural producers who are both above and much above the poverty line rather than to those who are under the poverty line. If these concessions fail to bring about any increase in agricultural production above the trend-line, to that extent it will also fail to have the expected massive results in reducing unemployment and under-employment in rural areas. It is only when both the extension of irrigation and the use of chemical fertilisers is directed towards the marginal and small farmers as against the medium and large farmers, that one can expect positive results by way of both increased production and employment. The budget contains no proposals for such differential treatment. While on the industrial side the budget attempts at improving the competitive capacity of the small and labour intensive units by tax adjustments with the larger and less labour intensive units, no such principle has been followed in regard to the [illegible] tural units which also differ in their size and [illegible] intensity and where the bulk of the producers are [illegible] small and using much greater labour intensity in their agricultural operations.

Impact on Industries

On the industrial side a system of differential tax levies has been extended and enhanced to improve the competitive capacity of the small units. While this will undoubtedly lead to a rise in the price paid by the consumer for the products of such industries, there is no guarantee that this will bring about a larger sale of the products of small industries. Here again, the reasons for the comparative slow growth and poor conditions of the small units as compared to the larger ones, are more structural and institutional than price oriented. It may well happen that except in the case of established small units in the match industry and the hand-loom sector in the textile industry, the differential tax now sought to be imposed on items like tooth-brushes and tooth-paste, food products, toilet soaps etc., will only lead to a higher price being paid by the consumer without the compensation of a higher volume of employment. While these taxes may discourage production in larger units, it may not stimulate increased production in small units which ultimately depends on marketability and the result may well be a fall rather than an increase in the overall production. The problem of the small units and more especially of the village units and artisans cannot be solved by a system of differential taxation. Much more direct action by way of investment, training in skills, marketing facilities, cooperativisation etc., are required.

Removing Poverty and Employment

The extent to which the budget can influence the elimination of poverty and unemployment depends not so much on tax levies and tax reliefs, but on the planning process, on investment and on the removal of the structural imbalances and inadequate infrastructural facilities that are coming in the way of the small producer whether in agriculture or industry or in rural or urban areas. Mr. Charan Singh is undoubtedly right when he says that it is only by concentrating on the small units we can hope to solve the problem of Indian unemployment and poverty. But where he is over-optimistic is in his belief that this can be done by a system of differential tax duties. Essentially the problem is structural and institutional and the solution requires a much more massive political will that is required for picking out the upper and middle income classes and especially of the urban sector for differential taxation.

Therefore, while Mr. Charan Singh has shown a great deal of boldness in formulating the budget proposals and some tenderness towards the rural agricultural middleclass in giving his tax concessions, I do not think his budget will succeed in dealing with the fundamental objectives which he has placed before the country, viz., eliminating poverty and unemployment. There is also the danger that the budget may if not immediately but at some fairly near future, lead to inflationary consequences and if that happens, the entire system of production including agricultural production will get exposed to the threat of instability, accentuation of poverty and increased unemployment.

Suggestions

I may venture to make a few suggestions which may help to improve the situation.

1. Confining the benefits of the proposed tax concessions on fertilisers and light diesel oil only to the category of marginal and small farmers.
2. Distributional arrangements through fair-price shops and ration cards of kerosene to poorer sections of both the urban and rural society without the additional duty now imposed on kerosene.
3. Withdraw all the vexatious and financially unremunerative levies such as those on toothpaste, tooth-brush, toilet soaps and food products mainly consumed by children.
4. A massive investment programme of public works in the rural sector apart from irrigation for the purpose of improving intra-village links of communication, transport and mobility.
5. A massive programme of housing activity in the rural areas in the public sector not only for residential purposes but also for other purposes such as schools, comunity halls, sports grounds, ware-houses etc., and of incentives in the private sector for promoting construction activity.
6. A massive programme of rural industrial extension service and the building up of skills in rural areas especially in the realm of non-agricultural activities.
7. A programme of common marketing of products of small and large units in selected sectors, prices being adjusted amongst them from the stand-point of clearing the entire supplies.

There are of course other fundamental requirements for a long term solution of the problem of Indian poverty and unemployment such as removal of structural imbalances, involvement of the poor in the institutions and facilities intended for their benefits, radical re-structuring of the existing educational system and population control. But even the measures I suggested above, I think will make some significant and noticeable impact on the problems of production, poverty and unemployment which the budget for 1979-80 has formulated as its major objective.

Before concluding, I must welcome the many measures other than the reduction in the duty on fertilisers and light diesel oil which Mr. Charan Singh has suggested for encouraging agricultural production. Here again I would plead for the implementation of concomitant measures that will direct these benefits to the smaller agricultural holdings rather than to the medium and large holdings.

Finally, I welcome very strongly his proposed expenditure Commission. It has always been my belief that public expenditure in India contains a large element of both conspicuous consumption and non-functional expenditure. If the proposed Commission has embodied in its terms of reference the basic principle of functional expenditure and does its job efficiently, it will go a long way in effecting substantial reductions in public expenditure without impairing efficiency. □

THE CENTRAL BUDGET

K. K. Birla
Industrialist

THE UNION Budget for 1979-80, presented to the Lok Sabha on 28th February, is unique in many respects. The amount of additional taxation it proposed—Rs. 665 crore, which in a full year would have yielded about Rs. 708 crore—is the highest ever. This, along with the Railway Budget proposals and the increases in the Postal rates would mean a total additional tax burden of more than Rs. 900 crore. The Deputy Prime Minister has subsequently announced some reliefs in excise duties amounting to Rs. 31.45 crore. But despite the fact that the number of commodities sought to be taxed is the largest ever, there remains an uncovered deficit of Rs. 1,387 crore, again the highest in recent years. Simultaneously, one must concede that an effort has been made in the Budget to give tax-reliefs to the rural sector Whether this was necessary or not is a different question.

Take the direct taxes first. After an in-depth study, the Chokshi Committee on Direct Tax Laws made valuable recommendations for rationalising the direct tax structure. All these have been thrown to the winds The Committee's suggestions have in some cases been even reversed. For example, instead of abolishing, the surcharge on income tax has been increased in the Budget proposals As a result, the maximum effective rate of income-tax on individuals has been increased from 69 per cent—which was already pretty high—to 72 per cent, instead of its being reduced to 60 per cent as was proposed by the Chokshi Committee. Apart from Income Tax rates, the Wealth Tax rates have been steeply increased on slabs beyond Rs. 10 lakh. Added to this, the exemption limits on savings through Provident Fund, Insurance premia and so on, have been brought down substantially in higher slabs.

The Government should seriously reflect as to why it has become necessary to introduce fresh taxes every year. Ever since the concept of Planning was introduced, there has been endless talk of an era of plenty and prosperity. But that has remained only a mirage.

The Budget certainly provides relief to the rural sector. It will be very unfair to say that such relief has helped only the 'Kulaks'? The relief has in fact helped both big and small farmers

The Budget, it is feared, would leave people with hardly any incentive to save. And without savings there can be no investment.

The tax burden on the Corporate Sector has been increased by a hike in the rate of surcharge from 5 per cent to 7.5 per cent. The Corporate tax in India being perhaps the highest in the world, how can this conduce to capital formation?

The recommendations of the Indirect Taxation Enquiry Committee, headed by Shri L. K. Jha, have been completely overlooked. None of its important suggestions—abolition of sales tax on inputs to registered manufacturers, of octroi duties, lowering of import duties on selected commodities, the downward revision of indirect taxes, rationalisation of the excise duty structure, and so on—has been implemented. Except for a minor re-structuring of the excise duty rates to bring down the effective rates from 28 to 15, no major rationalisation has been attempted in the Budget. What for are these committees if their major recommendations are to be completely ignored?

Inflation does not warrant increased taxation. T increase in revenues it causes should cover the hi in costs and, hence expenditure, following from it. The average growth-rate of G.N.P. for 1978— is planned at 4.7 per cent and the industrial grow at 7 per cent; the resultant increase in revenues a internal resources, can, therefore, be earmarked developmental expenditure. Thus, with proper pla ning and wise utilisation of resources, the country c march ahead on the path to progress without a additional taxation and the Government can be sav of the botheration of its annual exercise of tappi new resources.

While talking of the Budget the first thing tl strikes one is the urgent need to effect all round ec nomy in governmental expenditure which goes mounting relentlessly. It is encouraging to note tl a Commission is being set up by the Deputy Pri Minister to go deep into this matter. Let one ho that it will study the matter in detail and sugg ways and means to economise in all directions.

The longterm growth needs of the country require appropriate encouragement for more investment in new industrial fields. No sensible person could object to the swing in the Government's policy towards rural development and for the emphasis on cottage industries and other measures to reduce unemployment. But at the same time, it would be imprudent not to provide encouragement to the organised industrial sector, in order to meet the growing needs of the people who yearn to have better standards of life.

Besides, there should be some consistency in taxation policy for people to have an idea of the Government's economic policy and taxation philosophy. As matters stand, some concessions are granted one year and abruptly withdrawn the next. For example, the long-term capital gains, which were exempted from tax (with certain conditions) in the last year's Budget, have again been brought under the purview of taxation. Similarly, special excise duty concessions, granted in 1976 for three years in respect of several items with a view to encouraging production have not been extended despite the general expectation that they would be, since the industries continued to require such incentives. To give yet another instance, the Tax Holiday granted to new industrial units, under Section 80-J of the Income-tax Act, provided much needed encouragement in the initial years of teething troubles. In respect of a number of industries this concession has been withdrawn in the current Budget.

The Government should seriously reflect as to why it has become necessary to introduce fresh taxes every year. Ever since the concept of Planning was introduced, there has been endless talk of an era of plenty and prosperity. But that has remained only a mirage. Where are the fruits of the heavy taxation and the great sacrifices that the people are being continuously required to make ever since Independence? It may be pertinent to examine as to what has gone wrong.

The two main factors which increase public expenditure are inflation and developmental activties of the Government. Regarding public expenditure, one must first distinguish clearly between expenditure on the Public Sector industrial units and other non-industrial developmental projects The expenditure on the former can be substantially reduced by allowing the private sector to expand in all areas except a few that may be reserved for the Public Sector Developmental projects can certainly be pursued with a proper priority rating and without waste.

Another important cause of the huge deficits lea ing to heavy taxation is the lamentable performan of the Public Sector units, which account for a to investment of the order of Rs. 12,800 crore. T working of all these units has resulted in a loss Rs. 14 crore for the year ending March, 1978. Thirte units in the Public Sector which have been incurr losses continuously for more than five years have fact been declared sick. On an investment Rs. 12,800 crore, even a modest rate of 10 per c return would have yielded a net amount of Rs. 1,2 crore to the Public exchequer. Had the performan of the Public Sector units been upto the mark it wo have almost wiped out the Budget deficit.

Everyone makes mistakes; to err is human. B what is amazing is that we do not seem to learn fr mistakes. The Public Sector units have all along b a losing proposition. Yet the irony is that the Gove ment is keen on further expanding them! Not o that, whenever a unit in private sector becomes si the Government hastens to take over its managem or to nationalise it. Units became sick even in olden days. But instead of the Government tak them over, they changed hands from one entrepren to another—perhaps a more dynamic one Thus p lic money was never wasted in such acquisitions. W should the Government now waste its energy a resources over such take-overs?

The Government's endeavours should, indeed, directed towards putting the existing public sector u on a sound footing. It should also stop dabbling business except on a selective basis. It is no use vesting scarce resources more and more in the pu sector projects when the existing ones are runn inefficiently and incurring huge losses.

I have already pointed out that the Budget certa provides relief to the rural sector. It will be

unfair to say that such relief has helped only the 'Kulaks'? The relief has in fact helped both big and small farmers. If any section of Society is benefitted by the fiscal measures it is a matter of satisfaction But the fact remains that farmers have been granted relief by imposing taxes on other sectors. The Deputy Prime Minister would not have had to widen the tax base so much had he not reduced excise duties on fertilisers and other agricultural inputs to the tune of Rs. 209 crore. In other words, to grant relief to the Agricultural Sector, he had to collect to that extent additional amounts from the other sectors. This raises the important question of objectives. From time to time, the need to tax the rural sector is emphasised on the plea that its contribution towards the national economy is inadequate. The fertiliser prices as fixed by the Government, were in fact quite reasonable. There was no consumer resistance. On the other hand there was good demand for all types of fertilisers. Against this background concessions on commodities like fertilisers that are intended for the exclusive use of the rural sector from which additional resources are sometimes sought to be mopped up, are inexplicable. However, now that so much relief has been granted to the rural sector let one hope that the Government will resist the pressure for enhancing the food grain prices.

We cannot build up a strategy of development on deficit financing on the assumption of continual good monsoon conditions over the future.

The only direct way in which the tax system can help to better the conditions of the poor is the extent to which it gives direct relief by way of tax concessions to the people below the poverty line either on their consumption or on their production.

It is claimed that the Budget aims to eradicate poverty and reduce unemployment. This could have been achieved only by stimulating savings and encouraging more investment. These objectives, it is feared, would hardly be achieved by this Budget. On the contrary heavy direct taxes are counter-productive and increases in indirect taxes inflationary. When about 40 per cent of our population are below the poverty line taxation on such a scale, causing all round hardship, should have been avoided.

The Deputy Prime Minister could have reduced the taxes on individuals and the corporate sector, which would have infused dynamism in the entire economy. The earlier Budgets have shown that a lowering of direct taxes does not reduce the Government's revenues In fact, the experience of the advanced countries like the United States and Japan, as also of the developing countries like South Korea, Phillipines, has shown that with every tax-cut the economy progressed and thus exchequer gained.

Likewise, the Deputy Prime Minister could have spared many of the essential articles from taxation. It was contended on behalf of the spokesman of the Finance Ministry that the rise in the prices was likely to be only 1 per cent. It is feared that the rise would be much higher than that.

The effect of the tax proposals on a few essential commodities selected at randum is being given below. It would be seen from that except for the toilet soap, the likely rise in prices is quite substantial.

The Deputy Prime Minister had to spread the tax net very wide to raise the massive resources he needed. Instead of such a heavy tax effort, involving considerable burden on the public, he could have resorted to more market loans and other capital receipts to partially meet the deficit. With ample uncommitted rupee resources of Banks and a comfortable Foreign Exchange position, an entirely different strategy could have been adopted even while encouraging the agricultural sector and promoting small scale and cottage industries.

That apart, in order to provide incentives and tax concessions the Deputy Prime Minister could have gone in for a larger dose of deficit financing, if so required.

It should not be forgotten that an increase in money supply alone is not responsible for inflation. If increased money supply chases increased quantities of goods, the prices remain stable During the last few years, despite the increase in money supply, reasonable price stability had been maintained as is evident from the following data : (*Page*—26).

In the absence of structural changes in the land ownership and productive assets in the rural areas, these concessions are bound to make the rural rich richer while it may or may not make the rural poor less poor.

In view of the fairly comfortable food stocks, the higher estimated production of agricultural raw materials, and the substantial foreign exchange reserves, the country is now fully geared to absorb even larger doses of money supply to stimulate development. Any consequential inflationary trend can be neutralised by properly planned increases in production all round, which is the prime need of the hour and for which the economy is well poised.

The reasons for the comparative slow growth and poor conditions of the small units as compared to the larger ones, are more structural and institutional than price oriented.

The longterm growth needs of the country require appropriate encouragement for more investment in new industrial fields. No sensible person could object to the swing in the Government's policy towards rural development and for the emphasis on cottage industries and other measures to reduce unemployment. But at the same time, it would be imprudent not to provide encouragement to the organised industrial sector, in order to meet the growing needs of the people who yearn to have better standards of life. Such incentives the Budget does not provide.

Dr. Ludig Erhard, former Chancellor of the Federal Republic of Germany, had become a legendary figure for his role in bringing about an economic miracle in

Commodity	Pre Budget Price	Excise Duty before Buget	Excise Duty Proposed	Likely after Budget	Expected rise in Price
Soap (Laundry)	—	5.25%	15%	—	9.75%
Soap (Toilet)	—	10.5%	12.5%	—	2%
Tooth Paste	—	10.5%	20%	—	9.5%
Matches (50 Sticks Box) per gooss Mechanised Sector	Rs 9.20	Rs 4.83	Rs 7.20	Rs 11.57	25.7%
Kerosene Oil (per litre)	Rs 1.12	Rs 0.40	Rs 0.50	Rs 1.22	8.2%
Petrol (per Litre)	Rs 3.50	Rs 2.25	Rs 2.75	Rs 4.05	15.0%
Cooking Gas (15 Kg Cylinder)	Rs 34.25	Rs 262.50 M.T.	Rs 400.00	Rs 36.32	6.04%
Edible Oil (Ground-nut oil per 10' kgs)	Rs 68.00	Import duty imposed for the first time		Rs 71.75	5.5%

* *Tax relief on some items has been given later.*

West Germany after the country was totally razed to the ground in the Second World War when Dr. Konrad Adenauer, the Chancellor, made him the Federal Minister of Economic Affairs in 1949 there were all round shortages and the economy was in a state of collapse. A few industries, soon after commencing their operations enjoyed a flourishing sellers' market where prices were high and the profits fabulou Dr. Erhard was, therefore, under immense pressu to impose stringent controls on the prices and the pr fits of these industries. He however, resisted to th and pleaded with his critics to allow him 2/3 yea time to organise matters. Fortunately, he got the fu backing of Dr. Adenauer, who supported his strateg of not clamping controls or restrictions on prices an the profitability. High profits attract more entrepr neurs to an industry ; this is precisely what happen in West Germany. The high profitability of t industries gave so much boost to production that went up by leaps and bounds and within a sho period West Germany made an astounding econom recovery. The miracle needed only a few yea patience. Why cannot we in India follow th example ?

	Increase in Money Supply	Index of Wholesale Prices
1975–76	10.4%	(—) 1.1%
1976–77	18.8%	0.1%
1977–78	15.8%	5.2%
1978–79 (Upto February 1979)	16.8%	(—) 0.03%

It is time our people ceased groaning under hea taxation and enjoyed reasonable returns from hea investments made all round by the Government over period of years. □

This Budget has shown concern for the Farming Community

Prof. C. John

P. G. Professor of Economics, Scott Christian College, Nagercoil-3.

THIS YEAR'S budget has to be viewed in the background of favourable conditions in the economy. The economic survey presented to parliament this year has given an optimistic picture of the Indian economy. The accumulation of foreign-exchange reserves has proceeded further though at a slower rate and has reached a record figure of 50,000 million rupees. Though agricultural production was adversely affected by unprecedented floods the country had good harvests and has a reserve of 20 million tonnes of food grains. An eight per cent increase in industrial production and three and a half per cent growth in G.N.P. are indications of the health of the economy In spite of heavy deficit financing of 15,900 million rupees wholesale prices has shown a marginal declir of 0.6 per cent during the current year. In this bacl ground and with economic philosophy of the Financ Minister in particular and of the Janata Governme in general some radical changes in favour of agricultu were expected in this budget.

Finance Commission Recommendation

The need to implement the development plan ar the transfer of resources to the States in accordance wi the recommendations of the Finance Commission h placed the Central Government in the unenviable pos tion of trying to balance the budget by every possibl means. The result has been a heavy dose of taxatio so as to fetch a net additional revenue of 6,650 millio

rupees. Even after this heavy taxation there is a deficit of 13,550 million rupees compared to last year's budgeted deficit of 10,500 million rupees and actual deficit of 15,900 million rupees. There is an increase in the duties on several items like cigarettes postal articles, soaps, cosmetics, petroleum products, cars, scooters, motor cycles, pressure cookers, domestic electric appliances etc. These are mostly luxury and semi luxury items, but they affect middle classes and even the lower classes in the urban areas. In the levy of these taxes the budget has only followed the traditional pattern followed during the last three decades of Independence in the name of soaking the rich taxing a wide variety of articles that constitute the very basis of a modern standard of life.

It is highly doubtful whether these taxes will drive the urban middle classes choose the Gandhian way of life. The only result will be higher cost of living in the taxes as a result of the higher prices of these articles. There are a few levies like the increase in the duty on kerosene and the tax on bidies that will affect the common man particularly the weaker sections. The only justification for these will be the Government's need for more money. The increased duty on petroleum and the increases in duty on cars, scooters etc. combined with the adjustments in rates and fares by the Railways will result in pushing up the cost of living of the urban middle and lower classes.

Industry Survives Heavy Taxation

It may be felt that these taxes will hit industry because the demand for the taxed commodities will be adversely affcted. But if we study the progress of these industries during the last two decades in the light of the successive doses of taxes on these commodities it will be seen that they have grown in spite of these taxes. Only in the case of automobile industry the steep increase in petroleum prices in 1974 resulted in the sudden fall in demand for cars but even here in the course of four years the demand has picked up at the new level of prices and it is likely to exceed the previous peak production in a short time even though the price of petroleum has risen further as a result of this budget. The attraction of a modern standard of life or rather a westernised style of living is so great in our society that many people will be prepared to pay any price to achieve it rather than go without it and they will not be satisfied with a life of Gandhian simplicity. Further high prices and higher cost of living will lead to higher salaries and wages so as to keep up the standard of life that the particular class of people are accustomed to.

This line of argument may lead one to conclude that there is likely to be a cost push inflation in the country But India is primarily an agricultural country with about 70 per cent of the people living in the rural areas and they are not very much affected by the prices of these items regarded as essential for urban life Further the most important factor that has contributed to inflation in the country during the last two decades has been the shortage of agricultural commodities In a year of bumper harvests due to seasonal conditions prices of agricultural commodities are low and consequently general price level also will be low So the remedy for inflation is to be sought in increasing agricultural production.

Stagflation

India has been having what economists call stagflation or stagnation existing side by side with inflation from about 1965 onwards. With increasing agricultural production during the last five years inflation has been brought under control. Now it is necessary to remove stagnation. The economic stagnation along with great growth of population has contributed to the growing unemployment in the country. The economic stagnation is due to the lack of effective demand for any increased output in industry and in some cases even the existing capacity of industry cannot be fully utilised due to insufficient demand. The demand for most of the industrial products at present is from the small minority of urban people who have got high cash incomes which can be disposed of to satisfy their desires.

On the other hand the vast majority of the rural people including even the so called Kulaks or the upper crust of the rural population have got limited disposable incomes due to the high cost of cultivation, low prices of agricultural products and consequent low margin of profit Agricultural prices which have been kept low to satisfy the vociferous urban consumer. Agricultural inputs, on the other hand, have been subject to heavy taxation in successive budgets on the assumption that agriculture is a highly profitable business. The result has been that even the most successful farmers cannot think of having a modern standard of life

Green Revolution in Limited Areas

Further most of the farmers do not even dare modernise agriculture due to the prohibitive high prices of agri inputs. Even the off take of chemical fertiliser was adversly affected by high prices. So it is impossible to have the Green Revolution throughout India. Instead the Green Revolution has been confirmd to Punjab, Haryana and small areas in Western Uttar Pradesh. Agricultural production can be given a push forward if agricultural inputs are made available at cheap rates. If agricultural production increases the agro-industries will expand and give more employment and by exporting agricultural goods and agro-industries products it will be possible to accumulate capital for investment in industrial development This can lead to greater and widespread prosperity in the country.

Agriculture-Oriented

A beginning in this direction has been made in this budget. There is a 50 per cent reduction in the excise duty on fertilisers. The excise duty on raw tabacco has also been removed. The customs duty on power tillers has been withdrawn. Similarly it is proposed to exempt P.V.C. Resins from customs duty if they are imported for making Pipes because pipes made of P.V.C. resins can reduce wastage of water in fields and thereby increase the effectiveness of irrigation. All these measures along with the continuance of the subsidy on fertilisers to the tune of 4,450 million rupees per year will mean that the budget marks a big step forward in the direction of using fiscal policy as an instrument of economic growth The availability of cheap agricultural inputs will give a fillip to the greater utilisation of fallow land and better utilisation of cultivated land for the production of larger quantity of crops and thereby usher an era of agricultural prosperity. This in term will increase the demand for industrial products of various types and provide a large marketable surplus for consumption by the urban people. Economic growth with justice for the rural population and general price stability will be the result.

It should also be remembered that agriculturists in Tamil Nadu who use modern inputs in substantial quantities find that their agricultural products have to be sold at unremunerative prices. They have organised themselves and have been agitating during the past few years for a better deal. The growth in the awareness of the economic difficulties of the farmers have been spectacular throughout the country and the need of the hour has found a natural spokesman in the Finance Minister. The farmers constitute the maj of the population and their voice cannot be stifled. budget has shown concern for the farming commu and has taken a few steps to relieve their distress improve their economic condition and this process benefit all sections of the people on account of plen supply of food and raw materials vital for the pe and industry respectively. □

Budget Hitting The Urban Clas

D.A.R. Subramanyam
T J.P.S. College, Guntur

AT LAST, in the new budget presented by the Union Finance Minister Chowdary Charan Singh, the long awaited exercise to translate some of the ideals of Mahatma Gandhi into construction programme of action that can go a long way in alleviating the conditions of rural masses and elevate their position in the society is found. The rural oriented, Kisan-benefitting budget will give a good start for the Janata Party governments comprehensive plan for rural economic development. But, out of his own anxiety to give more benefits to the rural people, Shri Charan Singh failed to display balanced attitude in the treatment of the budget. The loopholes in the budget may create some set backs to the progress of economy and may result in the deceleration process.

It seems that our Finance Minister has apathetic disposition towards the urban elite, for the budget, through its various measures forces the urban people to seek asylum in the rural areas. Most of the commodities that were heavily taxed are consumed by urban people Provision of concessions and withdrawal of levies on goods used by rural people should not have been done at the cost of urban people. The worst hit are the middle class and salaried people in urban areas. Probably, the urban people are horribly hit by the increase in the taxes on commodities like soaps, detergents, tooth-paste, cooking gas, kerocene, bulbs and postal articles which are viewed as luxuries by the Finance Minister In his budget speech he announced that the aim of these proposals is to curb luxury expenditures ruthelessly in the process of adoption of a more austere life style in tune with our traditional values and the hard facts of economic life. But, the problem is that these commodities are no longer luxuries. They have become part and parcel of the living of urban as well as rural people. Denial of consumption of these commodities by raising the taxes to the urban people on the plea of adjusting to the hard facts of economic life tantamounts to neglecting the contribution made by the urban people in economic development. The favour of the Finance Minister towards rural development can be shown in the form of spending more on irrigation and the improvement of agriculture through higher investment and really effective incentives. But, this type of heavy dose of taxation on these commodities is undesira since the purpose is to offset the loss of revenue (to reliefs granted to the farm sector. In fact, reliefs granted to the farm sector do not benefit farmers much. The rise in petrol and high sp diesel oil would raise the transport costs for the fa ers also. Even the removal of excise duty on manufactured tobacco will not render any direct be fit to the farmers other than relieving them from control of excise authorities. Instead of taxing hea the commodities commonly and largely uesd l toothpaste, detergents, etc., he could have impo more taxes on real luxuries like refrigerators, coolers etc. Anther source which he has not tap is direct tax. One of the objectives, as he disclo in his budget speech, reduction of income dispari can be achieved if direct taxes are raised.

The price stability achieved by the present gove ment cannot be sustained as the heavy dose of ta tion would raise the prices of commodities which largely consumed by middle and urban class. Ad to this the present situation will be exploited by traders by pushing up the prices of essential comn dities. All these will have a chain reaction result in fresh demands for increases in wages and de ness alowance by workers and other employees urban areas. Such demands appear in economy w two of their bad signs. Firstly the discontentm among urban people comprising mostly workers employees in government as well as private organi tions leading to strikes and work stoppages will hi er the industrial production embittering the indust harmony. Secondly any acceptance of the dema for increases in wages and dearness allowances by Government will generate inflation creating hardsh to the middle and salaried class Since the excise du have been raised on many items of common use increase in production costs aggravates the problem inflation.

The Finance Minister has stressed the importa of savings in the economy to rise the level of inv ment. But, it is very disappointing to find that budget has not provided any incentives for savin Rather, it has taken away the incentives availat

The increase in the rate of surcharge from 15 to 20 per cent, higher surcharge on corporate profits and reducing the exemption on approved savings (L.I.C., Provident Fund etc.) will not promote savings, and private investment. Thus savings may decline, due to increase in cost of living on one hand and on the other, the increase in taxes payable caused by reductions in exemptions.

However, the efforts of the Finance Minister to give a boost for rural development are to be welcomed. Proposals like reduction in the rate of interest on farm credit, extension of subsidy to farmers with holdings upto four hectares, construction of subsidised rural godowns, extensive programme of training rural youth for self-employment etc., will definetly lead towards the acceleration of rural development. It reveals the bias of the Finance Minister towards rural people. But, the development of rural areas should not cost middle and salaried class living in urban areas. The Finance Minister could have resorted to other alternative measures like open market loans and other capital receipts in order to fill the budgetary deficit

The Finance Minister has sought to improve the lot of the rural inhabitants.

Amar Nath Dutta
Economist

MORE CONTROVERSIAL than consummate and viewing the distant goals in preference of the instant sops that go in to make a fiscal document palatable but largely self-defeating, the Central Budget is, by any reckoning, a perspective life-sketch of the Indian economy. Dubbed as growth repulsive its slant towards the rural and the small sector has invited more stings than laurels while an objective appraisal constitutes the missing link.

The budget has been labelled antithetical to growth ostensibly because it fails to accede to fiscal stability viewed co-terminus with minor surface adjustments leaving the structure intact. By the same token, the comfortable cushion so far enjoyed by the urban elite and considered synchronous with a steady progress of the capital component is largely missing. All this has turned the acquiescent organised sector restive and also turned their exposure to the budget to growing scepticism.

The Finance Minister has skirted all ambivalence in crystallizing the government's economic policy to its logical manifestation and considered the welfare of the rural sector as the basic plank of his fiscal strategy. The three objectives of his resource raising exercise are; a slashing down of income dispartities to the extent possible, boosting production and reducing wastage effectively and finally, to reduce unemployment and underemployment of all types and magnitudes. The *dues ex machina* to manifest the latter a positive reality were to be found in a reinvigorated agriculture, a dynamised rural and cottage industries base and a filt towards more labour-intensive techniques of production.

The Finance Minister's credence on the agricultural sector and pique for the organised industrial sector will appear chagrin to the traditional make-beliefs and a cold orchestrated understanding of the growth process but will be considered a pace-setter in the perspective that the Janata government has set on the economic horizon. Agriculture has lived to its expectation of being a viable sector and delivered goods for three consecutive years irrespective of monsoon fluctuations. All this really warrants a special attention if productive forces are now to be geared to employment creation and income growth in the rural sector. For one thing, since the decade began, the divergence in the prices of agricultural and industrial products has increased by 9 per cent, all in favour of the industrial sector but for which the value of agricultural production would have gone up by nearly Rs. 900 crore A cue to his preference for the rural bigs is to be found in the logicality of his approach when an overnight structural reform would be a mere flight of fancy. The blessings of the status quo had to be held at least in the short run. The specific concessions provided to agricultural inputs are calculated to work out positive results in boosting production and holding down operational expenses such that the present 26.5 per cent subsidy in the bare economic cost of foodgrains is ultimately reduced through the sustained revolution in land. Undeniably, the rural areas and more specifically, the farmer must continue to be the target group of our economic endeavour and the leader of kisans, the Finance Minister has sought to achieve this by improving the lot of the rural habitants that must engage our prime attention For despite the swift development of the manufacturing and the transport sectors, more than 75 per cent of the active population are still dependent on the agricultural secor and primary occupations while the landless agricultural workers are most in need of help. That India lives in villages is as true today as it was fifty years ago.

Our Finance Minister is not "anti-industry" and against "largeness". But the core sector alone will be competent to take care of it and for this a more "realistic" approach will not be lacking, he assured. But his underpinning the need to modernise the production technique in small scale and village industries was in pursuance of obtaining a better output per unit of capital investment. In agriculture, family farming would yield more out of per unit of land; in industry the hand operated cottage and village industrial units could produce more per unit of capital invested.

The focus is thus clear and seen in this light, the budget need not be a shock as it unfortunately appears to many of us. Rahter a shock therapy was needed to weed out the morass of complacensy heaped on the policy planners who viewed budgetting not as a performance apraisal but a mimic show of a frantic resource raising exercise. On various counts, the budget framed this year is the manifestation of a guiding philosophy which proclaims that "our fiscal laws and tax concessions should be so designed as to foster techniques (labour intensive) which enlarge oportunities for employment".

The indication is distinctly marked. Industry in fact failed to create employment opportunities to the desired extent and offload the heavy burden that the national economy has been groaning under during the successive plan periods. Viewed against the backdrop of fiscal concessions given to the corporate sector in the form of tax reliefs, liberalisation of the licensing system, favourable foreign exchange reserves and a more or less stable export import policy, very little could be achieved and whatever precious little was acquired, was by way of utilisation of the existing capacity rather than as a result of new investment. However, scrapping of the benefits allowed under the excise relief scheme for setting up non-priority industries may discourage investment in the rural areas and perhaps it is in this context that the Finance Minister has proposed to set up a committee to study the impact of concessions to the organised industrial sector.

Another reason for his attempts at broadcasting the rural industrial sector might perhaps stem from the fact that a large part of the increase in industrial production in the organised sector has been in infrastructural and capital goods industries in the public sector where there is no corresponding demand in that or any other sector. The increase in consumption goods industries surprisingly is hardly more than 3 per cent and the rural sector buoyed up with sufficient incentives could gradually emerge as the focal point or the critical sector in the economy matching the strides of a sluggish demand predicative however on a sufficient infrastructural build-up in the countryside and the rural areas.

Two other cardinal features of the new fiscal dispensation are the rather uncommon treatment accorded to capital formation (private sector) and a flat curb on consumption imposed on the urban sector of the economy. At current prices during 1977-78, there was an impressive addition of Rs. 1,311 crore to the total capital structure of the private sector, a rise of 16.2 per cent over the previous year. At constant prices, this was Rs. 782 crore as against Rs. 692 crore in the previous year or an increase of 13 per cent. Even if it is assumed that gross domestic capital formation in 1978-79 will be no more than Rs. 16,700 crore achieved in the previous year and 80 per cent of it accruing to the core sector, then a 4 per cent rise in taxes on the industrial and capital goods would have reduced the real value of investment by Rs. 670 crore in less than a full year. The Finance Minister has drastically avoided this catastrophe and the new excise imposts will fetch a revenue of about Rs. 550 crore during the year. Further, on the face of it, a reduction of the Annual Plan by 10 per cent (17 cent in 1978-79 as compared to 27 per cent in previous year) may have more than checkmated reverses by an 18 per cent rise stipulated in inv ment this year (Rs. 12,511 crore as aga Rs. 11,448 crore) as against a 16.3 per cent rise the total plan outlay in the previous year. Assun prices to remain more or less stable (the supply el cities working themselves out to the extent possi and investment fairly maintains its normal progr *the real content of the Sixth Plan will* suffice give it full compliments, quite unprecedented in last 30 years of economic planning.

Secondly, the Finance Minister has taken consi able pains to avoid the cost push effects of taxes posed on raw materials and inputs at the intermed level, gimmick to hoax the end-users. In the f analysis, this cannot but magnify the price incr at the end user's level and what is more, the ramp price inflation bolsters the profit element at the in mediate stage. Instead, the Finance Minister straightway located the fiscal burden on the consu with a two-fold objective of reducing inflation and couraging conspicuous consumption in consonant the Janata philosophy of "back to the rural sec although doubts circumspect on the listing of sumer products amenable to taxes since most them include vulnerable items of mass consumpt A fresh thinking on the subject will help dispel ambiguity to show that the Finance Minister w like to change the pattern of consumer perferences wards rural products as he thinks more such prod will be available to the urban users by the cot and small scale units since nature abhors vacuum

Much furore is raised on a rise in the maximum rate from 69 to 72 per cent and that of corpo tax rates by about 1.5 per cent which just canno called deterrent since the Wanchoo Committee ago considered a higher tax limit at 75 per cent. one considers possibilities of tax evasion and pad of the expenses incurred on production, then the w drawal of the exemption given to certain capital g from taxation may provide a stronger incentive conceal the book value of such transactions and resort to illegal transactions, all of which may d counter productive in the long run. Again, since money had to be previously deposited in banks this effectively swelled the magnititude of legiti savings, the community may be loser to some e according to the monetarist's point of view. Exp tion was that a calculated tax relief granted t approved savings would in all probability enhance volume of both the real and monetary saving of community and all this at a time when capital fo tion could receive a significant boost.

Viewed from this angle observers can well not accent of discord in that while the monetary aut ties are more wedded to a policy of credit restr either by convention or by design and, generation internal resources by the corporate sector rea almost a dead end, enunciation of measures for b ing savings in the community would have been a in the arm for both the government and the inve public. Not long ago, the Prime Minister emph ed the obvious when he held that the country drifting towards a high-cost economy and so ex

į economists to design a low-cost model of production. But this could not be rendered possible to ;anslate immediately into action as the modern production system based on a heterogeneity of inputs nds it difficult to subdue their prices to a lower pla-au. Capital is one such input and anything that iakes it dearer will act as a fly in the ointment. Morever, the trend towards decentralisation of the orgaised sector seems to have suffered some reverses at ast, as the case for new industrial unit to diversify is gone by default in the budget proposals. While ERA issues and the listed blue scrips have already ımed up for quite sometime, new companies in the ipital market are already in a run because of a dited base for public subscription. Judged in this ght, the budget could do something positive to pull 'em out of the rut by proposing tax reliefs to the quity holders of new companies while listing fiscal oncessions to entrepreneurs taking up new projects desired directions. In the present context, broadasing the share market appears an essential ingreient of the market economy and a sprawling institu-onal complex both in the urban and rural areas could unmistakably impart an in-built flexibility to the system to work its way through. Considering the high potentials of the Indian economy, the investor's share in the community warrants an increase from the present 0.25 per cent to anywhere between 6 to 12 per cent as is now in most of the western countries. Further, to encourage new projects, such impediments as escalating capital costs have to be rigorously controlled while the fiscal outlook needs to be slightly modified from resource mobilisation to resource generation.

The budget is highly pragmatic on the employment issue and with a firm determination to enunciate a positive approach in this regard. The various reliefs calculated to strengthen the rural banking sector and provide sufficient manna for farming and allied occupations are steps designed to activate the primary sector for adequate utilisation of its production potentials. More than it meets the eye, the philosophy of the Janata party provides the *elan vital* of this year's budget than any conventional code of fiscal ethics or logic of economic planning. □

A hall-mark in Rural and Agricultural Development

Prof. Y. M. Patel,
Officer, Agriculture Finance Cell, Dena Bank, Baroda

MR. CHARAN SINGH, the Dy. Prime Minister and Finance Minister, has made enthusiastic effort or rural and agricultural development by giving relief f Rs. 300 crore to the rural people in his budget roposal for the year 1979-80. The main pitfall of ie Budget is that he has not shown the remedy to uild the uncovered gap of Rs. 1975 crore.

The finance Minister has suggested a number of teps for the development of agriculture and rural reas. He has cut down custom duties by 50 per cent n all chemical fertilizers. This will help the promoion of agriculture. Prosperity in Agriculture is the undamental need of a country like ours. The budget a hall-mark in rural and agricultural development. n order to create employment potentiality in Rural reas, due weight is given to small scale and cottage ıdustries. This sector is given reliefs which is a velcome step. But the point the Finance Minister has nissed is that he has not reduced duties on insecticides and pesticides. The budget witnesses the claim t the Finance Minister to develop agriculture but one an say that it will hardly benefit the farmer at an arly stage. As an expert commentator of the budget, ine can say that the budget is prepared in old fashion nd so it will not make any head-way in its proposiion. Yet the Finance Minister has tried to shape his budget in accordance with the Election Manifesto presented by the Janata party and its Government.

The weak aspect of the budget is that it does not ttend to the needs of common man. From the budget proposals it appears that the Finance Minister has not ept in mind its effect on Urban people and the Budget provisions will definitely increase the prices on items like Soap, Kerosene. Tooth-paste, Match Box, Elect, Electrical Appliances, Cooking Gas, Telegraph and postal services—all these will cause heavy expenditures to the common man who is already overburdened with the taxation directly or indirectly. Particularly, salary earner, middle-class and below poverty line people shall be heavily affected by these budget proposals. Not only this, the increased price-level will lead to heavy inflation, it is feared.

If taxation directly or indirectly was avoided and steps were taken to cut down the wasteful expenditure in Government and Public Sector administration, the common man would not have to bear the extra incidence of tax. As the role of the State is expanding in our economic field, public expenditure has increased by any means. In order to avoid wasteful expenditures, the distinguished Economist Prof. C. N. Vakil has suggested to set up a High Power Commission. The Finance Minister has made a provision for this which is praise-worthy.

In order to mobilise resources for development and fill the gap of Rs. 1,975 crore, the Finance Minister has left hardly any person to escape from tax He has increased direct taxes by 2-1/2 per cent and 5 per cent on personal income tax and Capital Gains Tax. Thus he has tried to reduce economic inequality.

There is no provision for the development of Corporate Sector. Suggestions made by an Expert Committee to reduce Income-tax rate is not accepted by the Government. This will lead to tax evasion and will also discourage savings. It was expected from the Finance Minister that in view of the desired Industrial Development by the Government, the Corporate Sectors should have been given reliefs in order to give encouragement to private investments through savings and increase the industrial growth rate and employment potentialities.

Uncovered gap in the budget amounting to Rs. 1,955 crore may not be allowed to disturb the economic stability of the country. In India, monetary policy and price policy have to play a distinguished role to maintain the economic stability.

After studying all aspects of the Budget, it can be concluded that there are no new ideas set in the budget and it is shaped in old fashion which may perhaps retard the economic progress. □

The Alternate Fuel for India

S. P. Talwar
Freelance Journalist

FUEL HAS COME to stay as the prime mover in all forms of human activity. Be it for cooking central heating or air-conditioning in the city dwelling or travelling in comfort, fuel is needed in one way or the other. Neither industry, big or small nor even agriculture by mechanical means can be run or undertaken without fuel, popularly known as energy. In a fast developing country like India with its large import bills for oil the problem of attaining self sufficiency in the shortest possible period has become an uphill task.

Despite its fast growing industries, our country still remains by and large an agricultural one where over 76 per cent of the population is employed to feed the nation. The mechanisation of agriculture has ushered in the era of industrialisation. The need to energise vast rural sector occupying more than 85 per cent of the total area of the country was, therefore, felt soon after the independence and the planners were asked to pay special attention to this aspect. In consequence, from the first Five Year Plan to the present sixth one, major stress has been laid on finding ways and means to produce more and more energy for developing agriculture and several agro industries on sound and profitable footing. Various methods of producing electricity viz with coal, diesel oil, hydro-electric and thermal have been put to op imum use depending of course on the availability of funds A lot of progress has been achieved through successful completion of various projects to generate more electricity through different mediums and at costs the country can hardly afford The following table shows the funds allotted during various plan periods on agriculture, irrigation and power generation and actual expenditure incurred under these heads, where available :—

The biggest snag in the implementation of vari programmes for power generation in India is heavy cost involved in generation on the one side the fast depleting coal reserves on the other. It been estimated by the geologists that by the y 2000 A.D. or in just over two decades from n India would have exhausted all its coal reserves. H long the replenishment of this vital fuel will t especially in the wake of dwindling forests to cre more space for human habitat, agriculture and ind tries, is anybody's guess. The continued availabi of oil is even worse. India, with its recent explorat of some oil and gas within the country, is still and large dependent on imports at prices which raised arbitrarily and too often by the oil rich natio It has been the experience in the past that e price hike has resulted in slowing down the tempo our development programmes but the nation has pay through the nose every time a new raise in oil pri is imposed. In fact we, the helpless buyers, have choice but to submit to the sadistic whims and cap ces of oil exporting countries and their Sheikhs. Th a sense has begun to develop that too much dep dence on the continued imports of oil is no lon feasible and alternate methods of fuel for pov generation must be explored. It is mostly in this co text that greater stress began to be laid on the de lopment of hydro-electricity from India's river wea even though dams constructed for storage or lift up of water for power generation reduced the sup of water for irrigating neighbouring fields in ma cases. The other alternative is the thermal ba power which is claimed to be cheaper in producti The idea has picked up and the generation of th mal power is being encouraged by installing therm power plants in increasing numbers. Yet this meth has its main draw-back in the prohibitive costs

Plan period	Agriculture		Irrigation		Power	
	Allocation	Expenditure	Allocation	Expenditure	Allocation	Expenditure
				In crores of Rupees		
First 5 Year Plan	361	291	168	384	127	260
Second Five Year Plan	341	210	381 105	420	427	445
Third Five Year Plan	660	1103	650	657	1012	1262
Fourth Five Year Plan	2410	3460	964	(Not available)	2030	2448
Fifth Five Year Plan	4730	(Not available)	2681	(Not available)	6190	(Not available)

setting up such a plant in the initial stages. The production of atomic energy on commercial scale in the county is still a dream of Alice in the Wonder Land.

The second part of the energy story poses the problem of distribution lines and their maintenance by competent staff. India being a vast country with its half a million villages scattered all over requires power cables of lakh of kilo-metres in length. Added to this an army of qualified staff is required for distribution and maintenance of power supply. It involves huge finances. On account of these bottlenecks we are not able to make much headway in overall development.

Solar Energy

HENCE THE NEED TO EXPLORE NEW AND CHEAP METHODS OF POWER GENERATION AND DISTRIBUTION WHICH SHOULD BE SELF SUPPORTING IN RAW MATERIALS USED IN THE PROCESS. THE ONE CORRECT ANSWER TO THIS COMPLICATED PROBLEM IS THE PRODUCTION AND USAGE OF SOLAR ENERGY.

Solar energy is no longer a new idea with the world scientists. Experiments with a great measure of success were conducted by Israel in the mid-sixties and today that country is so far ahead in this field that solar power is already in commercial use on a vast scale in various spheres like water heating to central heating/cooling and air-conditioning in the cities and powering of motors of the irrigation pumps It is employed as motive power for tractors, harvesters, collectors and other agricultural machinery in the rural areas Several agro-industries in Israel are dependent on solar energy for functioning Solar power plants manufactured by Israel are being supplied to a number of African states and some South East Asian countries for developing their economy Other countries like France and Mexico are also at a very advanced stage in the development of solar-powered equipments. In 1975 a United Nations mission which studied the possibility of applying solar energy to fight against draught in the Sahara desert in Africa, gave a call to set up largely scattered solar power pumping stations where the ground water level was between 5 and 10 metres deep. The Mission also recommended that small helio-electric power plants would be of great utility for lighting, air-conditioning and the milling of grains. Heliothermics was also preferred not only to dry fruits, vegetables and wood, but also for cooking and water heating

Important research programmes dealing with the conversion of solar energy into electricity have been launched in various countries with varying degrees of success. In India, the Department of Science and Technology is entrusted with the task and some work is already done in this direction. A Solar Energy Department is of late established in the I.I.T. New Delhi and preliminary work is being done. A few prototypes are built and installed in a number of public buildings in the capital like Ashoka Hotel and the Qutab Hotel to determine whether solar energy can be relied upon as a permanent and dependable source for commercial purposes and if so at what costs. Solar energy generated at the Qutab Hotel is being successfully utilized for air-conditioning and heating/cooling of rooms and water heating at costs lower by many times than by the use of conventional sources of heat and electricity.

In a symposium held in New Delhi some time ago the participants which included scientists and engineers from France, Mexico and some other countries, exchanged notes on the progress achieved in this field. Indian scientists claimed that small solar power producing units could be manufactured within the country far cheaper than the conventional ones, if produced on a commercial scale. It was agreed by all that India with its maximum sunny days (292) in a year offered ideal conditions for the generation and utilization of solar energy as also that the distribution costs would be almost nil since small self-sufficient units could be handled with ease, eliminating the need for highly trained and qualified staff to operate such units.

It can be predicted that solar energy is going to play a decisive role in meeting the world's power needs of the future. If India takes the que and utilizes its ideal position by intensifying basic research in this field with the cooperation of scientists of other countries also in the race, the great challenge of taming the Thar desert in Rajasthan and other arid areas in Eastern U P. Bihar, Madhya Pradesh, Andhra Pradesh, Haryana and Punjab can be more than met without putting more strain in our already hard-hit economy At the same time, indigenous manufacture of solar power plants in the country will not only save much needed foreign exchange now spent in importing power-generating machinery and equipments, but in times to come, will become a source of earning significant amount of such exchange through exports to other countries desirous of swtitching over to solar energy for their power needs. What is required is a strong determination on the part of the government to encourage greater research in this field ultimately to benefit the nation in its goal to prosperity ☐

Tidal Energy

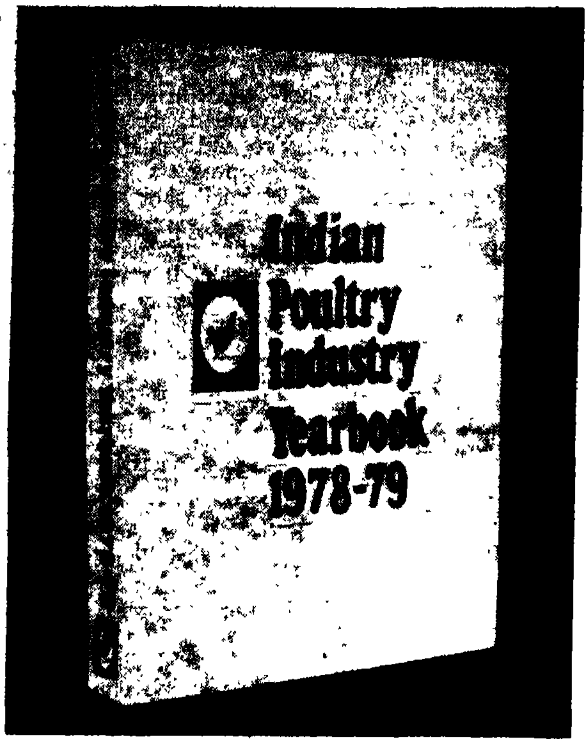
Large tidal variations are known to occur along the west coast of India, in the Gulf of kutch and in the east coast in the estuary of the Hoogly An expert panel appointed by the National Committee on Science & Technology has examined the possibilities of tidal power generation in the country.

BOOKS

Poultry

Indian Poultry Industry Year Book 1978-79 *(Fourth Year of Publication) Editors: Dr. J. N. Panda, Dr. D. K. Biswas, Dr. A. P. Sachdev and Dr. A. William Jesper Published by Mrs. S. P. Gupta, 2C/34 New Rohtak Road, New Delhi. Year of Publication:* 1978. *Pages* 486 *plus xviii.*

Price Rs. 50



THE INDIAN Poultry Yearbook has been contributing greatly, for the last four years, to the growth and modernization of poultry farming in the country.

The publication has six sections. The first chapter of Section one "Poultry Industry in India", written by Dr. J. N. Panda, recognized as founding father of India's poultry development gives a vivid description of various aspects of poultry industry such as feeds, marketing, rural uplift, infrastructure, consumer education, export possibility and private enterprise. The next chapter gives detailed statistics on different aspects of poultry industry. The last chapter of the section has eight review articles written by persons with rich experience in their fields. The reviews have been selected keeping in view the recent stress on employment of sub-marginal and marginal farmers and rural employment by the Government. The titles of these reviews are : "Financing Poultry—An answer to the Challenge of Rural Development", "New Directions in Poultry Development in the Next Decade", "Mixed Farming", "Poultry Litter as Fertilizer", "Poultry Cage Systems", "Prospects of Egg and Egg Products Technology", "Poultry : Nest Egg for Farm Women", and "Incubating Duck Eggs".

Section two, important and informative deals with different aspects of poultry managem the chapter on 'Management Guide' are given in tion on economic and technical feasibility of a farm, economics of egg production and imp management techniques. The next chapter fo attention on feeding and nutrition, and discus detail the problems of quality control. The chap 'Poultry Diseases' highlights the Gumboro dise infectious Bursal Disease, which recently broke Maharashtra and gives a schedule of vaccinatio disease glossary.

Section three 'technical', gives information o cation, extension and research institutes, Bibliog Standards on Poultry, and Glossary. Sections fo five are very important from the view point poultry community. Information has been upda these sections.

A new feature of this edition is the 'Interna Section. This section presents interesting articl poultry and information on per capita consumpti eggs, international poultry agencies, and egg and try meat production in some countries.

This 504 page book is indispensable to poultr mers, extension workers and the poultry indus

—R. R. Lok

Store Keeping

'Essentials of Store-keeping and Purchasing' *M. M. Varma. Published by M/s. Sultan Cha Sons, New Delhi.Pages* 189 ; *Price Rs.* 10 *for dents Edition and Rs.* 20 *for Library Edition.*

THE STORES management though of recent gin, has however, emerged as an important of store-keeping.

Store-keeping, in technical terms, indicate "ph storage of materials carried into the store-roo a scientific and systematic manner with a vie saving them from all kinds of damages and k and exercising over-all control over their movem The store-keeper is actually the trustee of the st In most cases, the stores deal with valuable an times scarce materials in bulk ; so the store-kee duty is both dutiful and serious. Due to this n of duty the store-keeper needs proper training.

Some of the important chapters of the book Store-keeping ; Store-house ; equipments ; receipt materials ; inspection, preservation and issu materials ; stores accounting ; materials budg and inventory control ; purchasing and disposal. This is a text book for B.A. and B Com. (Vocat courses) students. It is written in simple lang supported by diagrams and charts. There is, ever, sufficient scope to improve the quality printing Coverage of the subject is according to syllabus given at the end of the book. Additio "Select References" and "Expected Questions" each chapter would have enhanced the utility of book for the students.

—A. B. Bhattach

Nutrition

Handbook of Food and Nutrition : *By M. Swaminathan Published by Ganesh and Co ; Madras*-600017, 1977. *Pages* xiii+288, *Price Rs.* 12.
(*Foreign* £ 2.00 *or* $ 5.00)

THE BOOK is primarily written as a text book in nutrition for the students of agriculture, home science, and nutritions and dietetics, it is also useful for the practising physicians, paediatricians, dietitians, nurses, and workers engaged in public health and community nutrition activities.

The book contains 26 Chapters including an introduction and excluding a detailed Subject Index at the end. Besides, it has 7 important Appendix Tables which reflect the chemical composition of food, normal heights and weights for infants and pre-school children (0 to 4), normal heights and weights of children and adolescents, recommended nutrient allowances, the USA, FAO/WHO (1974), etc.

It discusses that the foods contain several chemical constituents (popularly known as nutrients) like proteins carbohydrates, fats, minerals and vitamins From the nutrient point of view, these can, however, be broadly grouped as : (i) *Energy wielding Foods* like carbohydrates, fats, cereals, roots and tubers, dried fruits, sugar, fats etc. cereals may also contain some amount of proteins, minerals and certain vitamins ; (ii) *Body Building Foods* or foods rich in proteins like milk, meat, fish, eggs, pulses, oilseeds, nuts, etc ; and (iii) *Protective Foods*, i.e., foods rich in proteins, vitamins, and minerals like milk, eggs, liver, green-leafy vegetables, fruits etc.

In one of the chapters on Water Balance (Pp. 101—105) there is a focus on the importance of water in the body-dealing aspects such as water intake and loss, composition of body fluids, exchange of water in the body, effect of excess water intake, effects of water deprivation for water balance, etc. The book also contains useful information on the individual food-items, effect of cooking and heat processing on the nutritive value of food, recommended dietary allowances, food groups and planning of balanced diets, infant nutrition and infant foods, nutrition of pre-school children, nutrition of school children and adolescents, nutrition of pregnant and lactating mothers, nutrition of industrial workers, etc., besides a scientific explanation of geriatric nutrition, obesity, therapetutic diets, food faddism and faulty food habits, etc. planning balanced diet, applied nutrition programmes diet and nutrition in India, prevention of malnutrition in developing countries and nutritive value of common Indian recipes, are dealt in five different chapters and have more practical orientation.

With his rich experience, Dr M. Swaminathan has made a very useful contribution in the field of nutrition which is both descriptive and analytical No doubt, the book would prove handy not only in the hands of university students but also those who are engaged in planning and administration of nutrition programmes for the children, pregnant and lactating mothers, and others.

B. N. Sahay

Industrial Finance

"Readings in Industrial Finance" ***Edited by Dr. L.C. Gupta, The Macmillan Company of India Ltd., Rs.* 68, *pages* 421.**

PROF. L. C. GUPTA, who has specialised in problems relating to industrial Finance has brought out the much awaited and needed book on the subject 'Industrial Finance' which caters to the needs of the teachers and the taught. It covers almost all aspects—theory and problems relating to Industrial Financing in India. In selecting the essays, Dr. Gupta's rich experience as a teacher in the Delhi School of Economics has definitely helped.

The book consists of twenty-eight essays classified under seven heads as follows : (i) Capital Market, (ii) Enterpreneurship, (iii) Commercial Banks, (iv) Development Banks, (v) Security Market, (vi) Foreign Private Investment, and (vii) Social Perspective of Private Industry. Editorial notes at the beginning of each essay epitomise what has been discussed in the paper. For those students who cannot get complete volumes of books on the subject either due to prohibitive costs or non-availability, Dr. Gupta's publication is a boon. Besides writings of authorities on the subjects like Joan Robinson and Gunnar Myrdal, the book contains extracts from the reports of various committees—Indian and Foreign for example Report of the Managing Agency Enquiry Committee, IMF Mission Reports, Report of a Study Group as Organisational Framework for Implementation of Social Objectives ; Reserve Bank of India Bulletin ; Report on Special Studies of Securities by U.S. Securities and Exchange Commission, which have a bearing on the development and/or problems of Industrial Financial in India. Quite a few of the essays are by foreign scholars. These have been included firstly because of theoretical import and/or their applicability to Indian conditions. Secondly these foreign authors have studies Indian problems very closely. For example while Gunnar Myrdal's essay is based on his in-depth study in India as a part of the overall study of Asia published as Asian Drama in three volumes, John Kenneth Galbraith's Essay deals with the theoretical aspect.

Dr. Gupta has done a commendable job in selecting the essays for inclusion in the volume

No essay that deals with the role of co-operative banks or financing of small scale industries has been included in the book. Now here in the total of seventy pages dealing with Commercial Banks, mention has been made of the co-operative banks though they also play an important role.

Some very good studies by Indian authors during the pre-independence period showing that financial facilities were lacking for rapid industrial growth in the country have not been included. Similarly, Report of the Industrial Commission of 1918 and Indian Central Banking Enquiry Committee 1931, which is regarded as the basis for setting up of specialized instructions to the financial needs of industry, also did not find a place in the book. Whereas Security Market has been dealt with as important one for it includes as many as seven essays. Some Aspects of Foreign Private Investment by S. S. Tarapore is the only essay on Foreign investment which seem to be insufficient.

—Dr. M. M. Mathur

Banking

Commercial Banking Volume I : *Published on behalf of the Indian Institute of Bankers by Vohra & Co., Bombay, Pages* 451, *Price Rs.* 30.

THIS IS THE first volume of the trilogy on commercial banking being brought out by the Indian Institute of Bankers. The object is to provide comprehensive literature on all aspects of banking primarily for the benefit of candidates appearing at examinations conducted by the Institute. The volume under review contains twelve chapters dealing with the banking structure, functions and operations. They are contributed by experts eminently qualified to write on the fields allotted to them. This makes the book useful to all those involved at various levels in conducting banking operations. The plan adopted in devising the three volumes effects keenness to equip the professional banker with appropriate skills to keep new tasks or to cover the spheres unfamiliar to them.

The commercial banking system has registered through the past two decades significant progress both in scale and character. It has now emerged as an instrument of both economic growth and social justice. As a result of this orientation, operations of Banks have undergone a phenomenal transformation with larger credit being channelled to the agricultural, the small-scale and the self-employed sectors. The objective of bank nationalisation in practical terms was to make banking services available to much wider sections o the community. These changes marking a distinc break and a dynamic advance from the classic pattern of banking have paved the way for services o socio-economic significance. These are succinctl summed up in this book. The functions and scop of new categories of Regional Banks which combin the more positive aspects of the co-operative and th commercial banking systems—are also suitably dovetailed into the various sections of the erudite articles The several innovative schemes like the Lead Bank o the institutions for funnelling industrial and agricultural credit are also dealt with in this volume. Th sections devoted to the analysis of the varied facet of banking operations such as the accounts under different categories, the handling of negotiable instruments, the role of the collecting banker etc. ar all explained with the help of suitable illustrations Relevant references to case-law are particularly useful in indicating the constraints and the norms to b meticulously observed in banking transactions.

Modern banking is a service industry with stres on personalised service in dealing with customer and the community. Viewed in this context th chapters on customer service and public relations ar illuminating. It is to be hoped that the next tw volumes to be brought out by the Institute of Banker will also, like the present volume, serve both as a advanced text book and a helpful companion to thos engaged in the banking profession.

—M. K. Dharma Raj

Hill Area Planning

Regional Planning for Hill Area *by Lalit K. Sen and Abdul L. Thata published by National Institute of Community Development, Hyderabad ; pages* 326, *Rs* 100.

THE RURAL Electrification Corporation deserves thanks for sponsoring a case study of Pauri Tehsil in Pauri-Garhwal district of Uttar Pradesh. The authors have taken pains to present a comprehensive study of the district. Incidentally, they have proposed a methodology which could as well be applied for the development of any other hilly region.

The authors have taken special care to highlight the peculiar problems of a hilly region with difficult terrain, in-accessibility, soil erosion and shortage of agricultural land. Obviously, high priority has been accorded to the activities like horticulture, forestry, sericulture, animal and sheep husbandry, village crafts and cottage industries. An adequate infrastructure of communication network to supply credit and inputs like marketing and storage facilities, and also providing potable water, health and education facilities have not missed their attention.

On account of the difficult terrain, it has not been possible for them to collect primary data for all the 1389 villages, many of which are located in inaccessible areas. They have, therefore, used the gravity model (or Reilly's Law) for identifying hinterlands. The authors devised their own methodology of interviewing people and adopting model studies to form their opinion. According to the authors, the area is among the poorest in the country but with vast potentialities. In 1971, of the 44 small-scale industries in the whole district only 4 units were located in th tehsil (P. 143) which were primarily consume based industries. A large untapped potential exist for setting agro-based industries like rice and flou mills ; forest-based industries like newsprint and furniture, sericulture-based industries like silk-weavin and handlooms ; and fruit-and-wool-based industries

There is enough opportunity for the developmen of leather industries also, as sufficient quantities o hides and skins were available. According to thei estimates, 28,800 hides and 50,000 sheep and goa skins could be collected annually with the present number of livestock. Assuming an average rate of 20 Kg of hides and 2 Kg. for skins, the total productio would be about 700 tonnes. Similarly, ancillary bone ameal industries could be set up. Assuming a 8 per cent death rate of cattle and recovery of 20 Kg of bones per carcass the authors have estimated tha about 600 tonnes of bones would be available i the tehsil which could be utilised as a good sourc of phosphate. The authors have worked details o some of these industries and suggested areas wher each could be located.

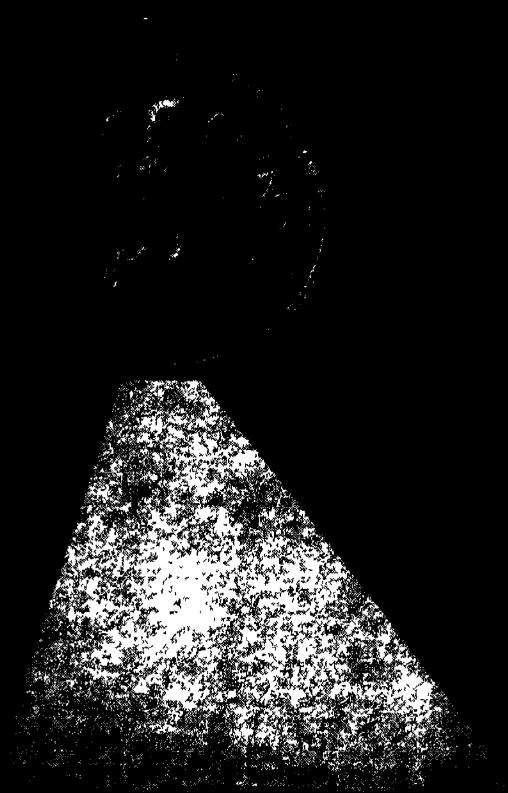
The objective of the study is to examine the exten to which rural electrification could help develop economically backward areas like Pauri.

On the whole it is a very useful study. But muc more important than the preparation of reports i the implementation of the recommendations made b the authors.

—Baldeo Saha

Printed by the Manager, Govt. of India Press, Ring Road. New Delhi-110064 and Published by the Director, Publications Division, PatialaHouse, New Delhi-110001.

yojana



PLAN FINANCES

FEDERAL ECONOMY

OUR ACHIEVEMENTS

Export of non-traditional goods up

EXPORT of non-traditional goods which include engineering goods, gems and jewellery, woollen carpets. leather and leather manufactures, cotton garments and marine products, showed an upward trend.

During the period April-October 1978, the exports of gems and jewellery went up by 19 per cent over that of corresponding period last year. It amounted to Rs. 560 crore in 1977-78 and Rs. 299 crore in 1976-77. The exports of cotton garments during the same period was for Rs. 165 crore, an improvement of 43 per cent.

In leather and leather manufactures, the increase was 23 per cent from 134 crore to 165 crore during the period April-December, 1978. The increase, however, is largely attributed to the export of items of finished leather.

Despite stiff competition the export of Indian engineering goods rose by nine per cent from Rs. 566 crore in 1976-77 to Rs. 617 crore in 1977-78. It amounted to Rs. 412 crore during the period April-December, 1978 as compared to Rs. 378 crore in the corresponding period last year.

Products Exports increase

THE all product exports during the period April—January have touched Rs. 4,415.81 crore as against Rs. 4,334.36 crore in the same period last year. The increase however, is not very high i.e. 1.9 per cent, but for month of January alone there is a growth of 22.8 per cent. In January 1979 the exports amounted to Rs. 339.38 crore as against Rs. 325.15 crore in January last year.

Beas Project's First Phase Completed

WITH the commissioning of 60 MW, fourth machine at the Pong power plant, the first phase of the Beas project has been completed. Now the Beas plant along with the Pong plant is producing 240 MW.

This power house is contributing more than 5 million units of power to the northern grid and the capacity utilisation is nearly 93 per cent.

The Beas dam project costing around Rs. 260 crore is one of the largest water resources development projects so far undertaken in the country. The stored water has not only helped to save the area from the fury of floods but also accelerated the pace of irrigation development in Punjab, Haryana and Rajasthan.

Indigenous Multipurpose Logic controller

THE Electronics Corporation of India Limited (ECIL), a Union Government enterprise, has developed a programmable logic controller that has varied potential applications in the industrial field.

Developed for the first time in India using completely indigenous knowhow, the programmable logic controller (PLC) can be used virtually in every process plant where process safety and interlocking are required to be taken care of.

ECIL, in co-operation with the industrial syste[m] group of BHEL, has installed the first PLC unit in steel mill at the Nagarjuna Steel Limited, Hyderab[ad]. This marks the first effort in India where a sophis[ti]cated modern control equipment has been integrat[ed] into an environment like the steel plant for controlli[ng] the process variables.

Apart from its use in steel plants, the PLC can [be] used in a variety of other areas such as therm[al] power plants, cement industry, petrochemical plan[ts] and fertiliser industry.

Record Export of Finished Leather

INDIA'S finished leather export has for the fir[st] time exceeded the target of Rs. 150 crore, touch[ing] an all-time record at Rs. 166.10 crore durin[g] 1978-79.

Compared to the export of Rs. 85.47 crore in th[e] corresponding period of the previous year, the increa[se] during April-February 1979 works out to 94 per cen[t].

The phenomenal rise in finished leather exports w[as] on account of more than 100 per cent increase in earn[]ings from buffalo-calfskin, sheepskin and goatskin. Finished sole leather export also recorded a spectacu[]lar rise of 237 per cent of Rs. 242.32 lakh again[st] Rs. 71.84 lakh.

According to statistics released by the Export Pro[]motion Council for Finished Leather and Leathe[r] Manufacturers, the overall leather exports have rise[n] to Rs. 299.64 crore against Rs. 224.56 crore, record[]ing an increase of 33 per cent.

Of the total exchange earnings of about Rs. 300 cro[]re, buff calfskin, goat and sheepskin—finished an[d] semifinished—alone accounted for a sizeable expo[rt] of Rs. 209.86 crore. Of this, Goatskin contribute[d] the major share of Rs. 148.52 crore, followed by sheep[]skin at Rs. 41.53 crore and buff calfskin at Rs. 19.8[] crore.

Earnings from leather goods and industrial leathe[r] manufactures recorded a significant increase of 50 pe[r] cent at Rs. 16.48 crore compared to Rs. 10.25 cror[e] in the corresponding period last year. The rise wa[s] mainly attributed to large shipment of leather hand bags, wallets, and garments.

NTC Makes Profit

THE National Textile Corporation earned a profit o[f] Rs. 3 crore against losses of Rs. 35 crore las[t] year and Rs. 65 crore the year before.

Some of the textile mills, particularly those in th[e] South had brought down the price. of yarn of highe[r] counts. Other mills are exploring its possibilities.

Rise in Vehicles Production

THE manufacture of trucks and other commercia[l] vehicles up to February 1979 has been 91,45[] compared to 36,653 during the corresponding perio[d] last year.

According to Planning Commission estimates th[e] demand for commercial vehicles would be 66,500 i[n] 1979-80 and 73,200 in 1980-81. The production wa[s] 46,502 in 1976-77 and 41,244 in 1977-78.

It is to be noted that there had been practically n[o] import of truck and bus chassis. □

YOJANA

Volume XXIII Number 9

16 May 1979

26 Vaisakha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910, 385481 (extensions 402 and 420) **Circulation:** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy— £0 12 or $ 0 25

Editorial

Raising from below

VERY FEW official programmes can have such instant appeal to the poor masses of the country as Antyodaya launched by the Government of Rajasthan less than two years ago. This novel scheme of attacking poverty afflicting the poorest of the poor in rural areas has inspired other States like Uttar Pradesh and Gujarat to follow suit. To all appearances, Antyodaya has then potentialities of being adopted as a national programme of action for improving the miserable lot of the people at the lowest rung of the social ladder through provision of self-employment, wage employment and old-age pension. A quick and concurrent evaluation of the working of the programme in Rajasthan made by the Planning Commission is certain to evoke more than passing interest at this point of time.

Even though the study was confined to a meagre total of 25 small families in 5 selected districts only, it has brought out the strong and weak points of the programme after examining the mechanics of implementation, the criteria for the selection of beneficiaries, the form of assistance rendered and the reaction of the village people. Nagging doubts about its efficiency to create real production opportunity and earning power, however, continue to persist although there are ample evidences indicating the beneficial changes in income and employment brought about by this noble programme.

Evidently the concept of Antyodaya has to be clearly defined before the cobwebs begin to obscure the objective. If it is to be a social welfare measure, backed up generally by old age pension scheme, productive activity in economic terms will be a queer mix. Even in those spheres where Antoyadaya is production-oriented, no special arrangement exists for providing technical know-how in management, production and marketing to the beneficiaries The poor villager is not expected to have the capacity of an entrepreneur. He needs help and guidance to make use of the facilities offered to him in the same way as a farmer needs the services of extension agencies.

Families having no economic assests and member in the age-group of 15—59 capable of economic activity will surely have the most dominating place among the beneficiaries identified for the Antyodaya. But they should be covered by old age pension scheme which cannot afford to leave them out of its count. Three other categories of families identified as eligible under the programme are capable of helping themselves provided the assistance envisaged is made available to them in right time and manner. Unusual delay in sanction and receipt of loan assistance both in cash and kind can be as damaging as the grant of waste land or land of marginal type where agricultural activity by and large cannot be profitable. The impediments on the way to successful implementation of the programme need to be removed and a regular system of concurrent evaluation of its working should be introduced to avoid the delay.

Sarvodaya, a comprehensive programme of uplifting [illegible] has remained a distant goal despite efforts made by saintly people aided by devoted followers. Although very much restricted in its vision and approach, Antyodaya has in recent years opened a new vista for the poorest of the poor. It should not fail like some other well-meaning but ill-executed official programme. □

Letters

For a better quality

Sir,

Please refer to your special issue on Full Employment. It has an article "Essence of New Industrial Policy for Full Employment", written by Smt. Abha Maiti. In this article it is mentioned that more and more industries are being brought under the purview of Khadi and Village Industries Commission. It may alleviate the employment problem but at the same time the Government has to find out an out-let for the products of various industries under KVIC. For example, take the case of textiles. It is everybody's experience that the textiles produced under KVIC are costlier than the mill made cloth, and are of inferior quality too. If the mill-made cloth, which is excellent in quality, is available at a cheaper rate, who will go in for a coarse variety cloth at a higher price?

What I want to impress upon you is, the quality of the products of the industries brought under the purview of Khadi and Village Industries should be of good quality and must be on par with the products of big industries.

P. Veerachamy
Kottapatty

Education Policy

Sir,

Please refer to your issue dated 26 January, 19 which carried the article "Role of Banks in Provid Employment" by Mr. D. C. Gupta, Executive Direc Panjab National Bank. The article has been rende very beautifully and the necessary information been furnished to throw light on the service the ba have been doing in showing placement to the peo in rural India. Further the article "Education a Employment" by Mr. D. P. Nayar is quite interestu and has touched all aspects of the problems. hope the authorities in Education Department w take note of the suggestions made in this article reorient the education policy and to make the studer eligible to get proper employment after schooling.

G.B.K. Murt
Karampudi

Useful for IAS Students

Sir,

Your special issue on Employment makes an i teresting reading. I must congratualate you for havir selected various articles covering different subjects ar aspects of employment. I am studying for IAS ex. mination and the contents of the 26th January, 197 issue have proved to be highly useful in my prepar tion for the exam.

P. Gopala
Coimbato

College Education of the Scheduled Caste Students of Cooch Behar Distric

Indrani Saha Roy

INDIA, though in short span of time, has developed in many respects, it requires reformation of its educational system. For the development of India, the difficulties which stand on the way of education will have to be overcome, in particular with the education of Scheduled Caste students.

A study of the college education of the Scheduled Caste students in the Cooch Behar district reveals that there are in all six colleges for a population of 14,12,148 (according to 1971 census). Among them the number of Scheduled Castes are 6,85,928 which is about 47.02 per cent of it

As is evident that out of a percentage of 47.02 among the total population, the number of college going students from this community is however lesser. There are certain difficulties that the students of this class face.

The environment or atmosphere plays a prominent role in education. The environment of Cooch Behar is such that these students do not get inspiration to be educated, which is one of the barriers in the continuing backwardness of their education in the district

The main reason, behind the fact that the scheduled caste students, though not lesser than the other students, do not obtain good marks in the examinations, is the illitracy of their parents who do not understand the importance of education.

Moreover, almost all the parents of these stu dents are very poor and they can not bear the ed cational expenses of their wards. Due to poor resul in the examination they do not get admission in tl good colleges. It is also true that without good pec niary conditions, no student can concentrate properl Their poverty persuade them to engage themselves works for their livelihood.

Another cause behind this is that there is no arrang ment for reservation of seats for scheduled caste st dents in any college of this district.

Because of the financial inability of this class, tl students cannot purchase their text books whereas tl College libraries except that the A.B.N. Seal Colleg can not provide books to these students.

The Govt. has given certain previleges to schedule caste students, which is not liked by the caste student Moreover it has created a society of two classes. The are facilities of stipend/scholarship and other helps f these students, but a general opinion is such that should be given to those who are really in need of i.e. it should not be given only on the criteria of b longing to this class. Because there are many in th class who have ability to bear the educational e penses.

It is also found that the students getting such stipened spend it for purposes other than the educ tional Hence, our Govt. should provide books ar other educational materials in lieu of cash, to di courage such a practice □

PLAN FINANCES IN A FEDERAL ECONOMY

Dr. D. T. Lakdawala

Deputy Chairman, Planning Commission

INDIA has the distinction of being a country with both a federal structure and a planned economy. It has also two separate organisations to deal with these—a Finance Commission appointed at least every five years to recommend on the sharing of income-tax, Central Excise, etc. between the Union Government and the States and grants under Article 275 to States in need of assistance, and a Planning Commission to deal with problems of planning and plan assistance. The Government of India gives additional grants and loans to States to enable them to deal with problems which could not be anticipated by the Finance Commission and would not fall within the purview of the Planning Commission as not pertaining to plan expenditure. The nature and magnitude of these styled as discretionary transfers has been gravely misunderstood. A large part of the assistance under this heading is by way of ways and means advances, by share of States in small savings within their borders, and in the Fourth Plan to deal with natural calamities. (Table I) Theses cannot be strictly judged by any overall test like the equity criterion.

While the principles of transfer through Finance Commissions have received wide attention, generally on the eve of the appointment of a new Commission or immediately after the publication of its Report, Plan asssitance has hitherto not received detailed scrutiny, there being no such parallel occasions. It is also less understood being out of line with the types of federal transfers that are relevant elsewhere. The recent prolonged discussions on this question at the National Development Council Committee Working Group meetings, the N. D. C Committee meetings and and finally at the N. D. C. convened to discuss the problem of plan transfers to States in the four remaining years of the 1978—83 plan have done much to clarify the various issues involved It also threw light on the intimate relationships between the work of the Finance Commission and that of the Planning Commission. I propose to deal with the question of plan assistance in light of the new knowledge that has emerged.

Before doing so, it may be worthwhile to see the relative importannce of these three categories of transfer. Table II gives the relevant figures since the Second Plan. It will be seen therefrom that the transfers through the Finance Commission have greatly increased in importance While this may be ascribed to many causes, the major reason is that with each plan non-plan expenditure increases in importance and the Finance Commission must cover through its tax-sharing and grant recommendations non-plan expenditure of States at least By implicit understanding earlier and later on by explicit terms of reference, Article 275 grants were so circumscribed as to leave States getting them with no surpluses on revenue account for plan purposes. This, however, does not apply to tax-sharing, which can be so recommended as to leave some States with large surpluses. Successive Finance Commissions have, however, found themselves hindered by the fact that tax-sharing on such principles of distribution that they could recommend enhanced greatly the surpluses of a new States while leaving zero surplus for some others. (Table III). With greater sharing of central excises and greater weightage to economic backwardness in its distribution, this may no longer be a powerful limitation. But the Finance Commission takes into account only the Central receipts on revenue account on existing basis of taxation and its revenue liabilities on non-plan account before recommending increased sharing. The capital receipts and revenue increase from new taxation, by and large, are beyond the purview of the Finance Commission.

Determination of State Plan Assistance

The range of the review of plan finances is wider than that of the Finance Commission for it comprises not only revenues on the existing basis of taxation but also additional resource mobilisation through increases in tax rates. Possible enhancement of prices charged for goods and services supplied by commercial departments and public enterprises and increase in their efficiency are a common ground, as the Finance Commission also lays down some norms for them. But public borrowing including external borrowing and other capital receipts and deficit financing etc. which raise important issues of monetary and economic policies are exclusively the concern of the Planning Commission.

The Planning Commission proceeds from where the Finance Commission concludes. It draws heavily on the Finance Commission's calculations regarding State revenues, non-plan expenditure, surpluses for plan etc. but follows a different procedure compared with the Finance Commission. While the Finance Commission after hearing the Central and State Governments submits its recommendations in the nature of an award which are generally accepted, the Plan including its financing is discussed at the National Development Council meeting where the Central Cabinet Ministers and the State Chief Ministers are present. It is the result of a consensus arrived at the meeting as well as at the discussions that have preceded between the Planning Commission on the one side and Central Ministries and State Governments on the other In its various exercises made for the purpose, the Planning Commission has to ensure a consistency between sector plan outlay required for the achievement of various production targets in the public sec-

TABLE I

Central transfers to States other than transfers by the Finance Commission and the Planning Commission

	(*Rs.*	*crore*)
	1969-74	1974-79
I. Non-Plan Grants		
1. Relief on account of natural calamities . .	291	67
2. Improvement of roads	*	137
3. Compensation for loss of revenue due to implementation of prohibition policy .	..	15
4. Incentive Bonus for procurement of food . .	[illegible]	154
5. Relief & Rehabilition of displaced persons . .	17	36
6. Education	22	52
7. Police	33	16
8. Agriculture . . .	72	..
9. Labour & Employment	16	..
10. Public works	36	..
11. Others	339	102
Total	**826**	**579**
II. Grants initially met from capital account and written back to revenue account .	**100**	..
Total Grants (I+II) . .	**926**	**579**
III. Non-Plan Loans		
1. Small Savings loans .	782	1566
2. Ways & Means advances	474	723
3. Short-term loans for fertilisers	405	490
4. Natural calamities . .	541	4
5. Special accommodation loans	954	..
6. Clearance of over drafts .	421	555
7. Others	446	137
Total III	**4023**	**3475**
Total (I+II+III) . .	**4949**	**4054**

tor and other plan objectives and the Central and State resources available for the Plan. Depending on the division of functions between the Union Government and the States, the sectoral outlays can be distributed between the Centre and the States The revenue surpluses of the States on non-plan account and the other States' receipts net of needed disbursements (which must be agreed to by the States) will generally fall short of the State Plan outlays. The deficit will be made good by Central Plan assistance, which must equal surpluses left with the Centre by *Finance Commission* and other receipts as worked out by the Planning Commission minus Central Plan expenditure. Any increase in non-plan expenditure or a decline in receipts beyond those allowed for in the calculations of the Finance and Plannnig Commissions will have to be met from additional resource mobilisation.

Unlike the Finance Commission, which can base its recommendations on norms, as *it is only concerned* with periodical recommendations regarding tax-sharing and grants, the Planning Commission has to serve the effects of departures from them and try ensure that the deviations are checked. Determin Plan outlay on the basis of norms may build a mec nism for unduly large State overdrafts or painful n for sudden drastic reduction in investment. If ph cal targets for State Plan have been laid down ir pective of the r actual financial resources, these have to be curtailed. To the extent Statewise dis **bution of all-India targets is flexible, shortage in state can be met by excess in another but a wi spread departure from norms can be costly. Planning Commission must by hoisting all possi danger-signals, warn against it and must constan press for action to abide by them.**

Distribution of Plan Assistance among States

Distribution of Central plan assistance among Sta has to ensure that the recognised objectives of t Plan are fulfilled. Broadly speaking, these may defined as growth with equity, including employme and regional equity. **Each Plan lays down detail specific programmes. Plan assistance has, therefo to be so given that the priorities of planning are o served by the States, that they raise the maximum resources, economise in non-Plan expenditure, a whatever they spend they spend efficiently and results.** The first condition is observed, the Sta Plans are finalised after discussions between the Pla ning Commision and the States. A State departi from agreed allocations without prior permission los plan assistance in proportion to its departure fro the agreement. At the time of discussing a Sta Plan, the Planning Commission tries to press t States to set apart as much for the Plan as possib from their current resources, and also to raise add tional resources for the Plan. As will be later see one of the components of the Plan assistance w earlier linked to the tax efforts of the States, but t results of plan assistance on development are not t subject of any special attention. In the earlier Pla plan assistance was discretionary. The Planning Co mission could, if it so chose, link up future plan ou lay with needs, growth potential and the success th the States achieved in getting the results from th past plan expenditure and give plan assistance to in the gap between a State's assessed financial sources and the estimated plan outlay. **But by t end of the Third Plan it was generally agreed that t prevalent assistance procedure led to unsatisfacto results and some States felt discriminated against. part of the resentment was against the vexatious tailed schemetic assistance which had widely differi provisions regarding Centre-State component, leavi little discretion especially to the poorer States. the NDC meeting, therefore, after considerable disc sions a formula regarding distribution of block assi ance, 70 per cent loan and 30 per cent grant, w agreed to for 14 States.** Once the formula of assi ance in which the results are not explicitly recogn ed is admitted, the only way to see that plan aid effective except the extreme course of withholding through evaluation, publicity, persuasion and frien pressure.

The device of centrally sponsored schemes or wh one may call specific purpose grants and loans

TABLE II
Transfer of Resources from the Centre to the States

(Rs. crore)

	First Five Year Plan (Actuals)	Second Five Year Plan (Acutals)	Third Five Year Plan (Actuals)	Three Annual Plans (Actuals)	Fourth Five Year Plan (Actuals)	Fifth Five Year Plan	Sixth Five Year Plan
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Transfer under Finnance Commission's Recommendations .	429	918	1590	1782	5420	13079	20845
B. Transfer through Planning Commission . . .	880	1344	2738	1917	4900	10595	13245
C. Other Transfers .	104	606	1272	1648	4992	4054	—
D. Grand total (A+B+C)	1413	2868	3600	5347	15312	27728	34090
% of (A) to (D) .	30.3	32.0	28.4	33.3	35.4	47.2	61.1
% of (B) to (D) .	62.3	46.9	48.9	55.9	32.0	38.2	38.9
% of (C) to (D) .	7.4	21.1	22.7	30.8	32.6	14.6	—

TABLE III
Surplus on Revenue account and Capital account as assessed by the Fifth, Sixth and Seventh Finanace Commissions.

(Rs. crore)

State	As assesed by the Fifth Finance Commission	Assessed by the Sixth Finance Commission		As assessed by the Seventh Finance Commission	
	Revenue surplus after devolution	Revenue surplus after devolution	Capital surplus or deficit (—) after debt relief	Revenue surplus after devolution	Capital surplus after debt relief
1	2	3	4	5	6
1. Andhra Pradesh	—	—	(—)32.49	923.18	(—)136.33
2. Assam	—	—	(—)20.91	86.82	(—)38.41
3. Bihar	199.46	—	(—)10.20	1092.32	(—)144.25
4. Gujarat	158.99	335.46	(+)17.90	1127.89	(—)33.81
5. Haryana	79.88	223.35	(—)25.01	678.63	(—)49.02
6. Himachal Pradesh . . .	—	—	(—)6.15	..	(—)4.73
7. Jammu & Kashmir . .	—	—	(—)10.01	..	(—)47.83
8. Karnataka	20 57	232.74	(—)5.10	1006.15	(—)104.52
9. Kerala	—	—	(—)13.70	235.05	(—)42.05
10. Madhya Pradesh . . .	15.09	110.18	(+)13.13	1111.25	(—)97.81
11. Maharashtra	419.29	748.42	(+)114.09	3004.75	(—)2.36
12. Manipur	—	—	(+)5.54	..	(—)2.87
13. Meghalaya	—	—	(+)0.72	..	(—)1.07
14. Nagaland	—	—	(—)0.63	..	(+)2.60
15. Orissa	—	—	(—)12.56	..	(—)78.99
16. Punjab	117.22	341.48	(+)33.43	809.50	(—)77.69
17. Rajasthan		—	(—)11.58	220.28	(—)142.02
18. Sikkim	—	—	—	..	(—)0.12
19. Tamil Nadu	..	184.53	(—)2.54	627.39	(—)96.20
20. Tripura	—	—	(—)2.65	..	(+)2.36
21. Uttar Pradesh	280.87	—	(—)18.21	1943.86	(—)225.[illegible]
22. West Bengal	—	—	(—)17.08	715.27	(—)[illegible].37
Total	1219.37	2176.16	(—)3.96	13[illegible].44	(—)[illegible]

2DPD/78—2

achieve some of the purposes of Plan assistance more directly. There are problems of national concern which cannot be left to States because of their inter-State implications like population planning, inter-State power transmission lines etc. National interests dictate that these should be looked after, and left to themselves or operated through the general mechanism of Plan assistance, the State could not be expected to do so adequately. There are other plan priorities where the States should be interested but because of their power structure or because of limited vision or lack of resources they have to be specially spurred and induced. Many of the interesting experiments in agricultural planning like the DPAP, SFDA, MFAL and CDA etc have come through centrally sponsored schemes. Further there are many problems where there is a great need for a substantial degree of uniformity in order that problems may be tackled in a reasonable time and yet may not claim undue resources. Instances of this are : sites for the landless, area planning for full employment etc. Left to themselves the States would be under great danger of being pressed by the interested groups to increase the benefits with the result that their extension would become difficult. In the Sixth Five Year Plan, revised minimum needs and block-level planning have received high priority. Both these are objectives in which the State may not have the necessary motivation. It is, therefore, seen that compared to the earlier period the expenditure on centrally sponsored schemes has been greatly enhanced. (Table IV).

TABLE IV

Expenditure on Centrally Sponsored Schemes

Second Five Year Plan	286
Third Five Year Plan	223
Three Annual Plans	117
1969-70	107
1970-71	122
1971-72	166
1972-73	538*
1973-74	399
1974-75	269
1975-76	331
1976-77	444
1977-78	644
1978-79 (B.E.)	874

*In the case of loans for emergency agricultural programmes and special welfare schemes and crash programmes for rural employment.

The centrally sponsored schemes may be entirely financed by the Centre or the expenses may be shared with the States in agreed proportions generally not less than 50 : 50. Where the States' interests are likely to be marginal and the inter-State interests are predominant a 100 per cent central finances may be needed. The great advantage in this arrangement is that the States' ability or their willingness to contribute does not constitute any hinderance to their full participation. Only their ability to execute the scheme does. There are a number of schemes, however, which are on the sharing basis and after the last meeting of the NDC, their extent has been increased. As compared with Rs. 1700 crore outlay on entirely centrally-financed schemes the estimated all-India expenditure on centrally sponsored schemes on a sharing basis is Rs. 3300 crore. If the latter are to succeed, the States must be enabled to contribute the needed share. To meet this requirement of the poorer States, a part of central assistance is now distributed on different principles in which poverty is recognised more explicitly. The sharing system has the advantage that it enables States to have a more effective voice in the execution of the schemes and also to express their direct interest or lack of it. If it is intended that the schemes are to be passed over to the States in future, it is essential that the States should prima facie be interested in them. Besides since the State staff executes centrally sponsored schemes, and economy in cost as well as efficiency in operation are greatly dependent on them, sharing has some logic about it. It gives the States the freedom not to participate in any scheme if they think it is not worth even half its cost. By exercising this choice, they may have more money to spare from their own resources for general Plan purpose, or for schemes in which they are more interested. The exact way in which this works will have to be closely monitored to ensure that the basic objectives do not suffer.

One point needs to be specially noted. The States' opposition to centrally sponsored schemes partly arose from the fortuitous fact that they were based on certain procedures like late announcement of State schemes after they had already committed their resources, that many of them were largely staff-oriented, and that detailed sanctions rested with central departments. It has now been decided that these features should be modified. A considerable opposition to them can only be explained on the assumption that it was felt that with their reduction or modification, the sum spared would be available as general plan assistance giving more freedom and powers to them. Once the contours are settled, a centrally sponsored scheme confers greater financial advantage to States as they get the share in the scheme in addition to the agreed plan assistance. This was perhaps how the centrally sponsored schemes greatly multiplied in the past after an NDC resolution had restricted their extent to 1/6th —1/7th of Plan assistance to States. The States pressed by their own relevant departments accepted them, pressed by Central Ministries the necessary resources were raised by the Centre. It is doubtful how with tight resource calculations, this State of affairs could be repeated.

The distribution of the benefits of centrally sponsored schemes among States would largely be the combined result of the nature of these schemes and the ability of States to take their advantage. Unfortunately in the absence of a detailed study it is not possible to separate the two elements but it is felt that since the amounts to be given through sharing were relatively limited, sharing condition would not have been an effective barrier.

Gadgil Formula

The Gadgil formula that was adopted since the Fourth Plan provided that distribution of plan assistance to the States should take five elements into account. Sixty per cent of the assistance was to be on the population basis, 10 per cent among States whose per capita income was less than all-India average, i.e. on the basis of economic backwardness, 10 per cent for continuing major and medium irrigation and power projects, 10 per cent on the basis of tax

TABLE V

Per Capita Plan Outlay—States

States	First Plan	Second Plan	Third Plan	1966-69 Annual Plans	Fourth Plan	Fifth Plan 1974-78
I. Spl. Category Satets.						
1. Assam	29	57	103	61	136	190
2. Himachal Pradesh	21	64	127	119	328	467
3. Jammu & Kashmir	39	77	166	152	351	603
4. Manipur	17	86	100	72	290	646
5. Meghalaya	*	*	*	*	358	705
6. Nagaland	*	*	280	400	747	1359
7. Sikkim	*	*	*	*	*	1163@
8. Tripura	21	94	156	82	223	320
II. Other States.						
1. Andhra Pradesh	33	52	91	58	98	236
2. Bihar	25	40	67	40	85	155
3. Gujarat	58	76	108	84	204	376
4. Haryana	*	*	*	91	358	481
5. Karnataka	46	62	100	70	128	276
6. Kerala	31	49	101	73	156	224
7. Madhya Pradesh	34	48	84	44	114	254
8. Maharashtra	37	57	103	83	199	372
9. Orissa	56	54	120	60	113	207
10. Punjab	175	146	212	90	316	531
11. Rajasthan	39	53	97	56	120	237
12. Tamil Nadu	28	57	98	71	134	201
13. Uttar Pradesh	25	32	72	53	132	237
14. West Bengal	54	48	80	39	82	200
Grand Total (I + II)	38	51	92	61	142	262

*Was not a State during this period.
@Relates to period 1976-78.

effort as judged from ratio of tax revenue to State income, and 10 per cent on special problems. The population and backwardness component are generally accepted as fair. The continuing irrigation and power project component aroused some discussion as these meant that States have some incentives to continue their power and irrigation projects beyond the Plan period, but since these absorbed a large proportion of State resources and once started needed to be finished at the earliest, there was some logic about it. The criterion of tax effort came in for the severest criticism on three grounds. Firstly, tax effort was judged as a proportion of revenue to State income and given state tax structure, poor States were not in a position to score on this ground. Secondly, since plan assistance was governed by a formula and plan outlay was determined by plan assistance plus State's own resources, in which tax mobilisation entered as a powerful element, this arrangement penalised poor States doubly. Thirdly, it was not generally noticed that population had no weightage in the tax effort formula with the result that between two States with equal tax effort, the State with lower population gained. In the beginning, desert, drought-proneness, tribal areas, hill areas metropolitan areas etc. were regarded as special problems but as special plan provisions came to be made for them, the 10 per cent provision was largely used for meeting the inescapable resources gap of States where even a minimum plan size could not be financed in the usual way. The major beneficiaries of this arrangement in the Fifth Plan were Rajasthan, Kerala, Orissa and U.P. Discretionary assistance for special problems continues to be essential as no formula can suit the needs of all the States. A formula which relied greatly on population would naturally do injustice to poorer States with large areas where per capita expenditure was no criterion of the needs. (It may be pointed out that the tendency of judging every type of assistance on per capital basis has some arbitrariness woven into it) There were further States with every large committed expenditure on irrigation and power which would leave very little for their other sectors. It was also likely that with their best efforts States occasionally faced difficulties which in the absence of special assistance would very much affect plan tempo and there is a certain base at which the tempo must be continued in order to produce an impact.

Poorer States

The poorer States have a special angle on plan assistance. They contend that one of the basic objectives of the Plan is the removal of regional disparities, which would also mean inter-State disparities and from plan to plan their per capita plan outlay not only compare badly with that of the riches States, but undergo a relative deterioration. (Table V). The result was that their rate of growth was low and the

disparities increased. Their own ability to raise plan resources is limited and much less than that of richer States. They must be, therefore, given such plan assistance that their plan outlay could greatly increase and preferably would be more than that of the richer States. This alone would enable them to accelerate their rate of growth and come more in line with the richer States.

This line of argument raises many questions. Before we take them up, there are a few misgivings that must be removed. Attempts and decisions made so far to look after the needs of such areas in the fiscal and other spheres must be assessed before there can be a serious debate on what further measures can be taken. There are many needs of backward and poorer areas that belong to the non-plan sphere and are looked after by the normal central expenditure and tax methods and by the recommendations of the Finance Commission which also addresses itself to the task of upgrading administration. Central Government has a fairly progressive direct tax system, and the burden of central commodity taxation among various expenditure groups has been revealed to be progressive. The benefits of Central Government expenditure among different States are not worked out. A large part of it is law and order oriented, and cannot therefore be specifically oriented to regional redistribution.

Under stress of modern ideas and needs, the Finance Commission distributions have been progressive. Even in income tax distribution, only 10 per cent is on the basis of origin, but 90 per cent is on the basis of population. In excise tax, which is now more important, origin is given no place; population is assigned a preponderent weight and backwardness the remaining. The nature of tax distribution is sometimes hidden by the fact that surpluses for plan differ, and are greater for better-off States. This is because their per capita revenue and even percentage of tax revenue to State income differ and per capita expenditure varies because of high non-developmental or developmental expenditure. Poor States can benefit a great deal by looking at the revenue and expenditure systems of other States not far above them. (Table VI).

India is a country of many large States, the Inter-State income inequalities are by no means particularly glaring. The inter-State regional inequalities may be more. While States are classified as developed and under-developed, most of the developed States have very underdeveloped areas. States advanced in one respect are backward in another. Economic and social infrastructure of one type or another is lacking in many of them. It is, therefore, difficult to reconcile them to a highly progressive distribution of central plan transfers. States are reluctant to apply within their borders the logic which they apply to their relationship with others. It is not possible to apply any mechanical criterion that backward areas should

TABLE VI

Per Capita Devolution, Non-Plan Expenditure and Tax Revenues

(in Rs)

State	Per capita devolution recommended by Seventh Finance Commission	Per Capita Non-Plan Expenditure 1979-84: including debt services	Per Capita Non-Plan Expenditure 1979-84: Excluding debt services	Per capita Tax Revenues collected for 1977-78	Percentage of Tax revenue to net domestic producet in 1977-78
1	2	3	4	5	6
1. Andhra Pradesh	381	861	783	85	8.56
2. Bihar	425	540	474	40	5.78
3. Gujarat	402	964	880	124	10.13
4. Haryana	346	991	765	147	9.73
5. Karnataka	357	1009	920	102	9.11
6. Kerala	415	1121	1031	100	9.74
7. Madhya Pradesh	419	759	666	62	7.19
8. Maharashtra	372	1126	1033	141	9.74
9. Orissa	493	856	754	38	4.45
10. Punjab	354	1327	1205	174	10.32
11. Rajasthan	404	942	811	67	7.13
12. Tamil Nadu	377	932	849	87	8.76
13. Uttar Pradesh	417	637	562	53	6.94
14. West Bengal	404	901	807	87	7.64
15. Assam	431	779	701	54	6.05
16. Himachal Pradesh	1027	1643	1537	60	5.22
17. Jammu & Kashmir	1106	1742	1446	66	7.43
18. Manipur	1919	2071	1946	21	2.12
19. Meghalaya	1384	1655	1598	28	2.96
20. Nagaland	5023	5328	4979	43	4.67
21. Sikkim	1786	3099	3027	64	..
22. Tripura	1352	1546	1466	15	1.58

grow more and others less and growth is dependent on many other factors than central plan assistance. It will not help more rapid development of the country or that of the backward areas to take such a stand.

An example of different purposes that plan assistance has to fulfil is the recent provision for assistance to States in connection with the externally aided projects. It was found that these projects needed considerable preparation by the States to be made eligible for assistance from international institutions and that some special incentive was called for in order to induce them to take necessary pains. **From early 1974, 15 to 25 per cet of IDA credit to States was given to them. It has been raised from 1978-79 to 70 per cent. This naturally puts States which are able to get aid from international institutions at an advantage compared with others and many distort purely judged from the equity viewpoint.** Theoretically, every State is free to submit such schemes, but the degree of competence, initiative and contacts required for the purpose may be found wanting in some places. Since it has been found that in the absence of such an incentive we may not be able to use fully the aid that we get from international institutions, a compromise has necessarily to be made between the two objectives of making full use of the external aid and of ensuring that plan assistance is distributed equitably and progressively. (Andhra Pradesh, Rajasthan and Karnataka have been so far the major beneficiaries).

Assistance from the Central Government to State Governments must, however, pay some attention to the great lag in economic and social infrastructure that backward States have and aim at reducing it. It is with this viewpoint that States very small in size or with great structural problems have been kept out of the Gadgil formula and a different policy followed in their case. Originally, Assam, Jammu and Kashmir and Nagaland were earmarked for this special treatment. As more territories were conferred Statehood, the number increased. With the nature of the territory and the special feature of their economy, their population is not a fair measure of their comparative needs. They are given a larger per capita plan outlay according to their judged needs. (Table VII & VIII). In view of their poor capacity to raise resources, the per capita plan assistance to them is more liberal. Per capita plan assistance to them in 1978-79 was Rs. 149 as against Rs. 41 in Gadgil formula States. Central assistance contributed 88 per cent in their case, compared with 40 per cent in the rest. It is not possible to extend a similar treatment to large but poor States, as such an extension will break the general formula. Exceptions are, however, made in case of parts of States like tribes, hill areas etc. Select Centrally sponsored schemes can constitute another line of attack. Useful suggestions for more relevant methods of attack may hopefully come from the recently appointed National Committee on Backward Areas. **The Gadgil formula had a 10 per cent aid reserved for States with per capita income below average; 10 per cent reserved for special problems has also been used to benefit them. At the last NDC meeting about one-third of plan assistance has been decided to be distributed on the IATP formula, whereby poorer States will gain more.**

The underdeveloped States also point out that market borrowings for which States have to get the permission of the Government of India are unevenly and inequitably distributed among States. This has a historical origin. When the gilt edged market was active, loans floated by States had rankings which could be seen in the original terms of issue and the market price. The central permissions took these into account in fixing the market borrowing to be permitted to State Governments. With the new situation, where the all-India financial institutions and the nationalized banks are the major subscribers to loans, the Government loan market has become captive, and therefore, the allocations have become a matter of Central Government decision. **For some time between 1971-74, the Central Government experimented with reducing the disparities in per capita market borrowings of States. Later on, it decided to strike a compromise between the historical pattern and the claims of equity by more or less freezing the 1973-74 pattern giving, a small percentage increase to every State. The rest of borrowings increasing fast every year go to enhance central capital receipts which are used to increase plan assistance (Tables IX and X).**

A demand frequently voiced is that public enterprises, where the Central Govt. has the final voice in location, should be located in backward areas. The location of public enterprises is decided on techno-economic grounds, but some preference is given to backward areas in location choice. Because of the presence of coal and iron, a large amount of public investment was made in Bihar, Madhya Pradesh and Orissa, but no appreciable impact on local economics has ensued. (Table XI).

TABLE VII

State-wise Plan outlays and Central Assistance for the Fifth Plan

(*Rs. crore*)

States	Fifth Plan outlay	Allocation of Central Assistance	Percentage of Col 3 to Col. 2
1. Andhra Pradesh	1333.58	1367.44	27.55
2. Bihar . .	1296.06	472.63	36.47
3. Gujarat . .	1166.62	209.98	18.00
4. Haryana .	601.34	99.29	16.51
5. Karnataka . .	997.67	232.46	23.30
6. Kerala . .	568.96	237.84	41.80
7. Madhya Pradesh . .	1379.71	326.26	23.65
8. Maharashtra .	2347.61	334.42	14.25
9. Orissa . .	585.02	229.15	39.17
10. Punjab . .	1013.49	132.39	13.06
11. Rajasthan .	709.24	273.41	38.55
12. Tamil Nadu .	1122.32	296.53	26.42
13. Uttar Pradesh .	2445.86	786.84	32.17
14. West Bengal .	1246.83	301.36	24.17
Total . .	**16814.31**	**4300.00**	**25.57**
Special Catagory States . .	**1521.02**	**1064.06**	**70.00**

As far as private investment is concerned, an effort has been made to develop some industrially backward areas in each State on the basis of Central tax subsidy ınd all-India financial institutional loan concessions. [ndividual States have extended similar reliefs through ›rovision of land and public utilities at cheaper rates, :oncessional loans, sales tax reliefs etc. State con- :essions sometimes work at cross purposes, and often o the advantage of backward areas in developed ïtates with a better system of administration, more ntrepreneurs to attract, and with greater powers to ubsidise. But even here the industries grown up do ıot employ local personnel and have no effective nkage with local economy, via input-purchases or utput-sales.

The Government can use the various Central finan- ial institutions for facilitating private investment in ackward areas. The statewise lendings of the ARDC, DBI, ICICI and IFCI show that more funds are being ›ent in developed areas. (Table XII). Banks have een asked to go into unbanked areas and lend more ıoney there, but even credit : deposit ratios in such tates are low (Table XIII). This was the natural ›nsequence of bank credit being largely given to ıe organised sector. It is sometimes argued that ıese should be progressively distributed among States. his argument rests on a fundamental belief that ıuity is the sole criterion of deployment of such funds hich serve no other purpose. It entirely ignores the ctor on the demand side. The major obstacle seems › be a shortage of eligible schemes for various rea- ›ns, including suitable institutions, organizations and titudes which have to be built up. Efforts must be ıade to change this position. The analysis of invest- ıents by central financial institutions as a whole by ates on 31-3-1977 hides some bright features and ends. For instance, ARDC which finances agricul- ıre has a high proportion of loans in poor areas— 7 per cent in U.P., 10 per cent in Madhya Pradesh ıd 8 per cent in Bihar. In industry-financ- ıg institutions the proportion of credit going › backward States has increased after 1969-70. Even ıe deposit : credit ratio of commercial banks is chang- g and term credit is more prevalent in backward ·eas. These changes are the result of policy deci- ons which it is hoped will be pushed further. With ·eater emphasis on agriculture and allied activities ıd rural industries and decentralized economy, and stress on more institutional funds being used in priority sectors and rural and semi-urban areas these developments should hopefully take place.

It is a mute question as to which authorities should move first in an attack on backwardness and how for one can push the other. It is obvious that local leadership, public opinion, local organisations, the Central and the State Governments have to more together. Some telling instances can be found of the entire blame not lying with Central assistance. State

TABLE VIII

Plan Assistance as proportion of Plan Outlay for Special Cateogory States

	Total Outlay (Rs. Crore)	Per Capita Outlay	Central Assis- tance (Rs. Crore)	Central Assis- tance as Pro- portion of total outlay
Fourth Five Year Plan	644.05	233	500.35	77.6
Fifth Five Year Plan	1521.02	550	1064.06	70

TABLE XI

Per capita market borrowing during Fourth & Fifth Plan States (Net)

States	Fourth Plan (1969-74) Per capita (in Rs.)	Fifth Plan (1974-78) Per capita (in Rs.)	1978-79 Per capita (in Rs.)
1. Andhra Pradesh	17.92	21.03	6.42
2. Assam	28.66	33.48	10.37
3. Bihar . .	11.47	18.81	5.82
4. Gujarat . .	40.55	39.32	12.14
5. Haryana .	50.01	52.98	15.40
6. Himachal Pradesh . .	14.88	37.63	11.96
7. Jammu & Kashmir . .	19.06	61.99	19.15
8. Karnataka .	31.96	32.41	10.29
9. Kerala . .	30.16	39.81	12.36
10. Madhya Pradesh . .	15.73	19.96	6.20
11. Maharashtra .	32.34	28.52	8.93
12. Manipur. .	23.20	75.49	17.99
13. Meghalaya .	21.74	110.28	29.94
14. Negaland .	59.88	237.40	53.29
15. Orissa . .	19.37	25.14	7.68
16. Punjab . .	35.92	35.19	9.74
17. Rajasthan	26.83	38.53	11.73
18. Sikkim . .	—	—	—
19. Tamil Nadu .	25.77	27.01	8.54
20. Tripura . .	—	40.03	12.40
21. Uttar Pradesh	12.34	18.58	5.78
22. West Bengal .	27.48	39.92	12.38
All States .	23.06	28.55	8.78

TABLE X

Share of Central and States in total net market borrowing in Fourth, Fifth and Sixth Plans.

(*Rs. crore*)

	Centre	States	Total
1. Fourth Plan (1969-74)	1544.03 (55.3)	1248.45 (44.7)	2792.48 (100.0)
2. Fifth Plan (1974-78)	3066.91 (66.5)	1545.32 (33.5)	4612.23 (100.0)
3. Sixth Plan (1978-83) (Estimated)	13039.00 (81.6)	2947.00 (18.4)	15986.00 (100.0)

TABLE XI

Value of Property (Gross Block) Invested by Central Government in Public Sector Undertakings in different States.

Rs. crore

State	Cumulative investment as on 31.3.1977	Per Capita (Rs.)
1. Andhra Pradesh	390.7	90
2. Assam	312.9	214
3. Bihar	2509.1	445
4. Gujarat	523.4	196
5. Haryana	142.7	142
6. Himachal Pradesh	11.8	34
7. Jammu & Kashmir	5.7	12
8. Karnataka	268.2	92
9. Kerala	274.1	128
10. Madhya Pradesh	1492.7	358
11. Maharashtra	630.3	125
12. Manipur	—	—
13. Meghalaya	—	—
14. Nagaland	—	—
15. Orissa	646.5	295
16. Punjab	197.8	146
17. Rajasthan	227.1	88
18. Sikkim	—	—
19. Tamil Nadu	466.9	113
20. Tripura	—	—
21. Uttar Pradesh	376.2	43
22. West Bengal	768.3	173
Unallocated and others (including U.Ts)	2206.8	—
Total all States	**11451.2**	**209**

TABLE XII

Statewise distribution of total and per capital assistance sanctioned by Financial Institutions (IDBI, IFCI, ICICI, ARDC, SFCs, IRCI) LIC and HUDCO·

States	Total Financial Assistance sanctioned	L.I.C. upto 31-3-77	HUDCO upto 28-2-77	Total	
				Amount	Per Capita
				(Rs. in crores)	
1. Andhra Pradesh	336.65	87.51	9.97	434 13	99.79
2. Assam	65.15	15.16	—	80.51	54.91
3. Bihar	243.98	66.27	8.66	318.91	56.91
4. Gujarat	617.52	200.39	27.82	845.73	316.79
5. Haryana	208.34	48.91	12.13	269.38	268.39
6. Himachal Pradesh	21.25	5.05	1.31	27.61	79.80
7. Jammu & Kashmir	30.15	3.82	4.03	38.00	82.30
8. Karnataka	369.58	90.92	18.32	478.82	163.43
9. Kerala	153.48	73.16	3.85	230.49	107.97
10. Madhya Pradesh	195.81	58.77	18.05	272.63	65.45
11. Maharashtra	1023.51	246.75	17.99	1288.25	255 54
12. Manipur	0.43	0.52	—	0.95	8.85
13. Meghalaya	7.47	6.18	—	13.65	134.88
14. Nagaland	1.64	0.76	—	2.40	46.51
15. Orissa	98.02	53.41	4.85	156 28	71.21
16. Punjab	165.98	52.44	9.78	228.20	168.40
17. Rajasthan	171.38	72.44	18.12	261.94	101.66
18. Sikkim	—	0.05	—	0 05	2.38
19. Tamil Nadu	588.73	153.51	33.37	775.61	188.26
20. Tripura	2.55	0.55	—	3.10	19.92
21. Uttar Pradesh	490.05	143.68	30.79	664.52	75.22
22. West Bengal	340.83	87.31	10.24	438.38	98.93
Total All States	**5132.50**	**1467.56**	**229.28**	**6829.34**	**126.12**

plan priorities themselves are sometimes different from what their interests require. Higher educational institutions, large prestigious industries, etc. are preferred to new primary schools, adult classes, village industry centres, extension work etc. These have all to be changed to tackle economic backwardness. On a problem like consolidation of holdings which in many ways is the essence of agricultural development, some States have lagged behind others. Use of institutional funds by developing States has often been less because of lack of proper local organisations like strong co-operative societies. Large overdues and lack of effective measures to repay them, have barred many rural credit agencies from access to further credit, and investigations have revealed that defaults were also from persons who could pay. It is also a matter of common knowledge that States have been unable to use funds provided to them because they have not prepared the necessary organisation. A study of use of centrally sponsored schemes would reveal that these have not been used by some States and money allocated to them surrendered, even when there was no sharing involved.

To Conclude

Plan assistance constitutes a declining proportion of total transfers from the Centre to the States owing to the increasing importanco of the Finance Commission's transfers. The per capita plan assistance is progressively distributed and as percentage of plan assistance helps poorer states considerably more. But the dynamic role that Plan assistance can play in this regard is limited because of many importont prerequisites that must be satisfied. In the absence of simultaneous State efforts at resource mobilisation and in economising non-plan expenditure plan outlay per capita is likely to lag behind more in poorer States than in richer States. In order to get a fair share in the assistance through banks and financial institutions significant changes are needed in their level of administration, organisations, attitudes and institutions. If these are forthcoming, with the new emphasis on decentralisation and the unorganised sectors and the new policies in assistance through financial institutions and banks, it is likely that the growth of poorer areas will receive a big fillip. ☐

Based on the text of Dr. V.S. Krishna Memorial Lecture at Visakhapatnam

TABLE XIII

Statewise Credit-Deposit Ratio of Scheduled Commercial Banks (Credit According to sanction)

Region/State Union Territory	As at th end of Decemb 1977 (Per cent
I. NORTHERN REGION	**92.**
1. Haryana	61.
2. Himachal Pradesh	24.
3. Jammu & Kashmir	35.
4. Punjab	42.
5. Rajasthan	62.
6. Chandigarh	283.
7. Delhi	123.
II. NORTH-EASTERN REGION	**40.**
1. Assam	45.
2. Manipur	47.
3. Meghalaya	18.
4. Nagaland	25.
5. Sikkim	3.
6. Tripura	36.
7. Arunachal Pradesh	8.
8. Mizoram	6.
III. EASTERN REGION	**61.**
1. Bihar	39.
2. Orissa	57.
3. West Bengal	69.
4. Andaman & Nicobar Islands	19.
IV. CENTRAL REGION	**46.**
1. Madhya Pradesh	54.
2. Uttar Pradesh	44.
V. WESTERN REGION	**69.**
1. Gujarat	54.
2. Maharashtra	76.
3. Dadra & Nagar Haveli	116.
4. Goa, Daman & Diu	40.
VI. SOUTHERN REGION	**81**
1. Andhra Pradesh	72
2. Karnataka	83
3. Kerala	61
4. Tamil Nadu	96
5. Lakshadweep	5
6. Pondicherry	70
ALL INDIA	72

Note : Data for 1977 are as on the last Frid of December 1977. (provisional).

REVIEW OF 1977-78 PLAN PERFORMANCE

Growth of GNP by 7.24 per cent
Foodgrains output at a record level of 125.6 million tonnes
Industrial production up by 3.9 per cent
Foreign Exchange reserve goes up to about Rs. 4500 crore

THE GENERAL picture of the economy, as it appeared at the time the 1978-79 Pla was prepared, was that the inflationary pressure and low rate of growth which characterised the economy during 1976-77 had given way to a much more statisfactory performance in 1977-78. This trend has since been confirmed. As against an increase of only 1.6 per cent in 1976-77 the growth of GNP in 1977-78 is estimated to have been 7.24 per cent. This was largely due to an impressive recovery in agriculture value added, from 5.5. per cent decline in 1976-77 to a 10 7 per cent growth in 1977-78.

Foodgrains output reached a record level of 125.6 million tonnes in 1977-78. This was reflected in the higher procurement of both wheat and rice. However, due to higher offtake from the public distribution system (12 million tonnes in 1977-78 against 10 2 million tonnes in 1976-77), the food stock with the public agencies declined from 18.0 million tonnes on 1-4-1977 to 15.4 million tonnes on 31-3-1978. Raw cotton production in 1977-78 was higher by some 12.6 lakh bales over the output of 58 lakh bales in the preceding year though it still remained below the 1974-75 level of 71.6 lakh bales. However, together with the opening stock and imports of cotton the supply position was quite comfortable during 1977-78. The combined output of Jute and mesta at 70 99 lakh bales in 1977-78 was marginally higher than 70 89 lakh bales in the previous year. The output of five major oilseeds which had declined from 9 9 million tonnes in 1975-76 to 7.8 million tonnes in 1976-77, went up by about 1 1 million tonnes in 1977-78. Sugarcane production was well in excess of the previous year's record production of 153 million tonnes.

There was deceleration, however, in the growth rate of overall industrial production in 1977-78, on account of power shortage in some areas, inadequate supplies of certain inputs and industrial unrest. The index of industrial production moved up by 3.9 per cent only, as against 9.5 per cent in 1976-77.

The growth rates of major industrial groups during 1977-78 are shown below :

	(per cent)
Mining and quarrying	2.5
Manufacturing	4 2
Electricity	3.4

Product-wise analysis of output trends showed that while in a few industries there was a fall in production (including semi-finished steel, aluminium, vehicles textiles machinery and certain drugs); industries such as salt, phosphatic fertilizers, diesel engines, boilers and detergents recorded over 20 per cent growth; and the output of commodities such as wheat flour and infant food, products like radio receivers and razor blades, and railway equipment increased between 10 per cent and 20 per cent

From a small surplus of about Rs. 72 crore during 1976-77 the country's trade balance swung into a sizeable deficit of Rs. 690 crore in 1977-78. However, due to the continued flow of inward remittances, the foreign exchange reserves increased further by Rs. 1637 crore and stood at about Rs. 4500 crore at the end of March, 1978.

According to provisional data the total value of exports amounted to Rs. 5376 crore in 1977-78 as against Rs. 5146 crore in previous year, showing an increase of 4 5 per cent. The value of aggregate imports is placed at Rs. 6066 crore in 1977-78 representing an increase of 19 5 per cent over the imports of Rs. 5074 crore in 1976-77.

The deceleration in the rate of growth of exports in 1977-78 was due to the recessionary conditions in the industrial countries which affected several of our export items like iron ore and other mineral ores, and chemicals and allied products, the sluggish overall rate of growth in the domestic industrial output, lower unit-value realisations in respect of certain export items as also restrictions placed on the export of oil cakes and oilseeds, raw cotton, vegetables, rice, cement, etc. to improve domestic availability.

The substantial rise in the value of imports in 1977-78 was attributable to planned increases in the imports of vegetable oils, raw cotton, synthetic fibres, cement, pearls, precious and semiprecious stones and chemical elements and compounds. The value of non-food imports increased from Rs. 4203 crore in 1976-77 to Rs. 5,940 crore in 1977-78, showing a rise of over 41 per cent. The value of food imports (including pulses) declined from Rs. 871 crore in 1976-77 to Rs. 126 crore.

As against an increase of 12 per cent in the index of wholesale prices during 1976-77, the index at the end of March 1978 was almost at the same level as a year ago. At the end of the year the prices of several essential commodities such as rice, edible oils, sugar, tea and vegetables were lower than at the beginning of the year. The wholesale prices of oilseeds and raw cotton also declined during the year but the prices of pulses rose by over 40 per cent The price indices of manufactures other than food products rose by 2 to 7 per cent. Although whole-sale prices remained fairly stable during 1977-78 there was about 3 per cent increase in the consumer price index, which was due

2DPD/79—4

to the sharp increase in the prices of pulses and moderate increases in the prices of coarse grains and cotton cloth.

Money supply expanded by 14.7 per cent between the end of March 1977 and the end of March 1978. While this was lower than the increase of 20.2 per cent in 1976-77, it was rather high in relation to the estimated growth of 7.2 per cent in the aggregate national output.

The domestic savings (at current prices) in 1977-78 are estimated to have been Rs. 19,498 crore as against Rs. 18,538 crore in the previous year. The ratio of domestic savings to GNP declined from 23 35 per cent in 1976-77 to 22.44 per cent in 1977-78 whereas the ratio of investment to GNP increased from 22.14 per cent to 22.51 per cent.(a).

The following table measures the physical output in different sectors in 1977-78 against the targets (b) laid down in the Five Year Plan for achievement by 1978-79 :

(a) The savings and investment estimates given are the estimates of the Planning Commission. While the aggregate estimates of savings of the Planning Commission and those of C.S.O. tally, the investment figures are somewhat different on account of different concepts used to calculate the new inflow from abroad.

(b) These figures relate to the targets indicated in the final Fifth Five Year Plan Document. These were subsequently revised while finalising Annual Plan 1978-79. The sectoral chapters show the actual targets (revised targets) for 1978-79.

The Annual Plan for 1978-79, the first year of a new planning quinquennium, was thus formulated against the background of relative price stability, comfortable stocks of foodgrains with the public agencies and a satisfactory level of foreign exchange reserves. The size and structure of the Plan, and the production targets in key sectors were determined on a realistic basis, keeping in view the likely availability of resource as well as the imperative need for stepping up the level of investment in the economy in accordance with the strategy of the new Five Year Plan.

TABLE

Targets and Achievements of different Sectors

Sl. No.	Sector/Item	Unit	Target 1978–79	Achievement 1977–78
1	2	3	4	5
	Agriculture			
1.	Food grains	Million tonnes	125.00	125.6
2.	Oil Seeds	-do-	12.00	8.93
3	Sugar cane (Cane)	-do-	165.00	181.63
4.	Cotton	Million bales of 170 kgs. each	8.00	7.10
5.	Jute & Mesta	Million of bales 180 kgs. each	7.70	7.12
6	**High yielding varieties programme**	Million hectares		
	(i) Paddy	-do-	18.00	15.60
	(ii) Wheat	-do-	15.00	15.50
	(iii) Maize	-do-	1.20	1.20
	(iv) Jowar	-do-	2.50	3.10
	(v) Bajra	-do-	3.30	2.60
7.	Gross Cropped Area	-do-	174.40	172.70
8.	Minor irrigation	-do-	28.10	27.30
9.	Soil Conservation on Agricultural lands	Lakh hectares	20.90	20.10
	Major & Medium Irrigation			
	Additional irrigation potential	Million hectares gross.	5.8	4.3
	Power (additional)			
1.	Installed capacity	MW	12,500*	7,484**
2.	Village electrified	No.	81,000	60,169
3.	Pump Sets energies	"	13,00,00	8,82,861
	Village & Small Industries			
1.	Cotton cloth-Handlooms and powerlooms	Million metres	4,700	4,100
2.	Khadi Quantity	-do-	Non indicated.	71.0
	Value	Rs. Crores.	-do-	64·2
3.	Village Industries	-do-	-do-	186.62
4.	Raw silk	Lakhs kgs.	50.00	36.93

*Target of addition to generation capacity during 1974–79.
**Realisation during 1974–78.

1	2	3	4	5
	Industries & Minerals			
	1. Mining			
	(i) Coal	Million tonnes	124.00	100.9
	(ii) Lignite	-do-	4.50	3.6
	(iii) Petroleum crude	-do-	14.18	10.73
	(iv) Iron ore	-do-	56.00	41.00
	2. Basic Metals			
	(i) Pig iron for sale	Million tonnes	2.50	1.64
	(ii) Steel Ignots	-do-	11.32	8.65
	(iii) Finished Steel (Saleable steel)	-do-	8.80	7.01
	(iv) Ally & special steels	Thou. Tonnes	570.00	540.00
	(v) Aluminium	-do-	310.00	178.50
	(vi) Copper	-do-	37.00	21.00
	(vii) Zinc	-do-	80.00	43 10
	(viii) Lead	-do-	16 00	7.50
	3. Metal Products			
	(i) Steel castings	-do-	100 00	65.0
	(ii) Steel forgings	-do-	130 00	90 0
	4. Non-metallic mineral products			
	Cement	Million tonnes	20.80	19.3
	5. Petroleum Products (including lubricants)	-do-	27.00	23.29
	6. Basic chemicals			
	(i) Sulphuric acid	Thou. tonnes	2700 00	2076.00
	(ii) Caustic soda	-do-	610 00	521 1
	(iii) Soda Ash	-do-	710.00	572.5
	7. Agricultural Chemicals			
	(i) Fertilisers(N)	-do-	2900 0	2000.0
	(ii) Fertilizers (P_2O_5)	do-	770 00	670 0
	8. Synthetic fibres and intermediates			
	(i) D.M.T.	-do-	24 00	25.5
	(ii) Caprolectum	-do-	20 00	15 8
	9. Food Products			
	(i) Sugar	Million tonnes	5 40	6.47*
	(ii) Vanaspati	Thou. tonnes	610.00	572.2
	10. Textiles			
	(i) Cotton Yarn	Million kgs.	1150 00	1057.5
	(ii) Cotton cloth (Mill sector)	Million metres	4800 00	4162.4
	(iii) Cotton cloth (Decentralised sector)	-do-	4700 00	4100 00
	(iv) Jute Manufactures	Thou. Tonnes	1280.00	1178.0
	11. Paper & Paper Products	Thou. tonnes	1050.00	965.0
	(i) Paper & Paper Board			
	(ii) Newsprint	-do-	80 00	56.0
	12. Industrial Machinery			
	(i) Machine tools	Rs. Million	1300.00	1027.00
	(ii) Metallurgical Machinery (including steel plant eqpt.)	-do-	380.00	288.0
	(iii) Cement machinery	-do-	150 00	226 00
	(iv) Sugar machinery	-do-	400 00	513.20
	(v) Cotton textile machinery	-do-	1300.00	1365.00
	(vi) Chemical & Pharmaceutical machinery	-do-	650 00	695.40
	(vii) Printing machinery	-do-	60 00	72.00
	13. Electric Power Equipment			
	(i) Steam turbines	Million KW	2.50	1 61
	(ii) Hydro turbines	-do-	1 40	0 88
	(iii) Transformers	Millin KVA	20 00	15.6
	(iv) Motors	Million H.P.	4.50	4.0
	14. Agricultural Machinery			
	Tractors	000 Nos	55	41
	15. Rail Transport			
	Railway wagons	-do-	15	12.2
	16. Road Transport			
	Commercial Vehicles	-do-	60	41.08

*Figures relates to sugar year.

Education			
Additional Achievement			
1. Age group (6–11) Class (I–V)	Lakhs	130*	69*
2. Age group (11–14) Class VI–VIII	-do-	58*	29
Health			
1. Minimum Needs Programmes			
(i) Primary Health Centres	Nos.	208	17
(ii) Sub-Centres	Nos.	11036	5101
(iii) Rural Hospitals	Nos.	1293	212
2. Medical			
(i) Doctors	(000)	38	32
(ii) Nurses	-do-	35	20
3. Cholera Control Programme Cholera Combat Teams	Nos.	54	41
4. Trachoma Control Programme Blocks/PHCs	Nos.	2509	2509

***Relates to 1974–79**
****Relates to 1974–78**

Discrepancy in Investment Estimates

THE PLANNING Commission and the Central Statistical Organisation have jointly examined the reasons for the discrepancy between quick estimates of investment for 1977-78 made by them. The Planning Commission's estimate of investment was Rs. 16,959 crore while the Central Statistical Organisation put it at Rs. 18,536 crore. This difference of Rs. 1,577 crore is because the Planning Commission estimate excludes the estimated value of assets created by the family labour of households which roughly averages about Rs. 1,500 crore. If this is taken into account there is no significant difference between the two estimates.

The differences between the concepts and procedures underlying the estimates of the two agencies should, however, be kept in view, as these affect the estimates by these agencies of investment in the public and private sectors.

The Planning Commission's figures show details of capital formation computed on the basis of revised budget estimates of the Central Government and the latest figures supplied by the State Governments for the purpose of Annual Plan discussions. Both the Finance Ministry and the Central Statistical Organisation (CSO) classify capital expenditure according to the UN classification system. However, exercises to estimate capital formation are carried out separately by the two organisations and, since the data in the budget document, in some cases, are not amenable to clear cut classification the estimates can differ even when there are no differences in the concepts used. The CSO also uses States' budgets and other documents for computing capital formation at the States level, and revises these estimates when revised data become available. Therefore, their estimates of this component can be different from those of the Planning Commission.

In the Planning Commission, amounts transferred by the Central and State Governments to non-departmental public undertakings and to private and cooperative units, for the purpose of capital formation, are treated as investment expenditures. But in the CSO, funds transferred to non-departmental undertakings for capital formation are treated as capital formation only when they materialise in physical capital and appear as such in the balance-sheets of the undertakings. Thus, there is a time-lag between the period when the Planning Commission classifies this transfer as capital formation and when it is treated as capital formation by the CSO.

THE COMMISSION treats transfers for capital formation to private and cooperative parties as components of public investment expenditures, because the funds are first derived from public sector investment allocations. But the CSO (and the Finance Ministry) follows established statistical practice in treating transfers from the public exchequer to private and cooperative institutions for capital formation as private investment rather than public investment even though the funds are derived from the exchequer.

It should be noted that there is sometimes substantial revision of the quick estimates of gross capital formation made by the CSO when it actually gets data from some of the sources, such as blance-sheets, on which it relies. Much caution is, therefore, necessary in comparing the quick estimates of different agencies, for there is no finality about the quick estimates.

The conceptual reasons given above explain why gross capital formation estimates of the Planning Commission and the CSO can diverge. The Planning Commission estimates are best regarded as approximations of "Investment Expenditures", and CSO estimates as those of finally materialised physical capital. The "quick" estimates of both are strictly preliminary and non-comparable. □



Bhagat Singh
Consultant,
Planning Commission

TRACTOR ON FARM in India remained controvertial and has frequently been debated in the ontext of abundance of labour and scarce capital .long with such debates cultivator's interest in tractoı ontinued to grow resulting in increasing number of actors on farms. Notwithstanding the pivotal posion of tractor on farm it is felt that tractor reduces ırm employment and its use, perhaps, does not result ı increase in production. Apparently such observaons certainly warrant detailed studies. Social and conomic implications of the use of tractor have to c closely examined before arriving at a definite conlusion. Its desirability or otherwise has to be judged ı the light of broad employment oriented governmental olicy The efficacy of the use of tractor on farm 'ith reference to employment, availability of power, ropping pattern, costs and returns so as to stimulate :newed thinking on the subject are to be examined. 'he results based on a small sample can not, however, e so critical but give broad indications. Relevant data 'hich forms the basis of the study were collected by ıe author from 74 operational holdings spread over 7 villages of a block in Meerut district of Uttar 'radesh.

Thirtyseven tractors were in actual operation in 7 villages of the block. An equal number of bullock oldings were randomly selected in the respective 17 villages to facilitate comparison of farm economy of two types of cultivations avoiding different effects due to agro-climatic and agro-economic factors to the extent possible. Holdings were matched with respect to area size, which has been delineated as small if its cropped area is less than eight hectares; medium if itis between 8 to 16 hectares, and large if it is above 16 hectares.

Employment

Introduction of tractor on farm is generally expected to have an impact on the extent of use and mode of employment of human and animal labours The quantum of use of human and animal labour does not depend upon the extent of tractor use alone but is also dependent upon the associated effects of tractor use on farm economy such as cropping pattern, crop rotations and intensity of cropping etc. A general tendency to grow more of sugarcane and wheat in rotation with sugarcane (retoon) is a labour intensive system of crop production, on one hand, tractor replaces animal labour directly and may reduce employment of human labour indirectly, on the other. Two opposite tendencies i e labour increasing and labour decreasing are thus at work simultaneously. It is, therefore, necessary to examine in detail the mode and extent of utilisation of labour for different categories

TABLE 1

Utilization of Human Labour in Farm-Workdays per farm (A day—8 hours)

Size class	Male		Female		Total	
	Tractor	Bullock	Tractor	Bullock	Tractor	Bullock
Small	686.39 (35.66)	505.97	62.94 (20.81)	52.10	749.33	558.07
Medium	1,093.71	1,112.04	114.29 (29.04)	88.57	1,208.00	1,200.61
Large.	2,534.87 (—27.77)	3,509.46	168.45	176.74	2,703.32	3,686.20
All Farms	1,319.29 (49.70)	881.26	117.69 (—62.92)	71.63	1,436.98	1,198.67

NOTE : –Figures in brackets indicate percentage difference from bullock farms.

and sizes of farms. It may, however, be mentioned at the outset that employment studies signify engagement on farm for crop production and not total engagement.

Human Labour per farm

Total utilization of male and female labour in different size groups of tractors and bullock farms is given in Table 1.

The engagement of male and female labours per farm tended to increase with the increase in size of holding in case of male labour and female labour as well. The utilization of male human labour on small sized tractor farms was 35.66 per cent higher than on bullock farm of the same size. But trend of utilization of male labour was reversed in case of large sized tractor farms, i.e. utilizasion of male labour on large sized farm was 27.77 per cent less than that on bullock farm. The utilisation of male labour on tractor as well as bullock farms in medium size class was of the same order, 1,094 and 1,112 work days respectively. Utilisation of female labour on small and medium sized tractor farms was higher by 21 0 and 29.0 per cent as compared to bullock farms of the same size but in case of large sized class it was not so different.

The results clearly show that the qunatum of engagement of human labour for tractor farms over all sizes was of the order of 1,437 as compared to 1,199 work days on bullock farms respectively. The coposition of human labour, however, varies with type of farm.

Labour utilisation

The utilization of male labour per hectare of area held by tractor farms was found to be less by 27 per cent as compared to bullock farms while considering overall sizes. The important reason for such a difference being that the use of a tractor on farm enhances the speed of farm operations The land preparation with a tractor takes lesser time as compared to that by bullocks. Similarly irrigation with the tractor covers an hectare of land in lesser time than irrigation by persian wheel The operations being important and indispensable for any crop particularly wheat, sugarcane and paddy result in reduced employment of human labour on tractor farms as compared to bullock farms. The utilization of human labour in case of medium and large sized tractor farms was 18.83 and 33.03 per cent less as compared to the bullock farms. On the contrary small sized farms, tractor as well as bullock, did not indicate any difference in the utilization of male labour per hectare.

The large sized tractor as well as bullock farms utilise labour to a greater extent as compared to the farms in small and medium size classes. Increased employment is probably the result of greater per cent of area under paddy. This crop needs larger number for irrigation, more labour for transplanting and intercultural operations as compared to other crops. The extent of utilization of female labour per hectare was, however, not found to be different on different types of farms as the nature of work done by this type of labour is more or less similar on all categories of farms.

Employment per work

It is seen that male regular labour mainly attended to pre-sowing operations. Family female labour, on the other hand was engaged in post-sowing operations only. (Table 2 on next page).

While considering employment of labour per worker it is observed that male regular labour worked for 24777 days during the year bullock farms against 211.04 work days on tractor farms.

Employment per worker increased with size of holding. The proportion of engagement in pre-sowing and post-sowing operations, however, varied with size and type of farm. The percentage of work days performed by male regular labour in large sized tractor farms on post-sowing was 54.17 which was notable as compared to other classes on all the farms. It appeared that such a high percentage was due to the engagement of such labour in irrigation by tractor or by oil engine which cultivators generally liked to operate themselves and did not leave it to hired labour.

The pattern of employment for family female labour was, however, more or less uniform in all cases.

Power on Farm

The power potential in terms of horse power including draught animals was much superior on tractor farms than on bullock farms. Small tractor farms had 25.25 Horse-Power as compared to 5 70 on bullock farms On medium size farms power available was 35.73 and 8.30 H.P for tractor and bullock farms respectively while power on large size tractor and bullock farms was 48.07 and 20.25 H.P. respectively. Considering availability of power per hectare no cultivator possessed less than 1 00 H.P. of power per hectare and varied from 1.15 H.P. in case of medium sized bullock farms to 5.51 H.P. in case of small sized tractor farms. The position was quite comfortable in respect of availability of power in the light of an estimate of agricultural engineers that one hectare of Indian farm needs 0 80 H.P. of power.

TABLE 2

Employment of human labour in farm operations—workdays/worker

Type of farm	Male-regular			Female/family		
	Pre-sowing	Post-sowing	Total	Pre-sowing	Post-sowing	Total
		Small				
Tractor	75.97	37.23	113.20	0.17	22.28	22.45
	(67.11)	(32.89)		(0.76)	(99.24)	
Bullock	84 92	15.08	—	—	100 00	—
		Medium				
Tractor	87.47	24 70	112.17	0.38	21.17	21.51
	(77.97)	(22.03)		(1.76)	(98.24)	
Bullock	152.13	20 73	172 86	1.63	25.47	27.10
	(88.01)	(11 99)		(6.01)	(93 99)	
		Large				
Tractor	175 91	207 84	383.75	4.26	70.34	74.70
	(85.83)	(54 17)		(5 84)	(94.16)	
Bullock	367.23	78.73	455.96	..	31.93	31.93
	(82.35)	(17.65)			(100.00)	
		All Farms				
Tractor	116.28	94.76	211.04	1.17	32.34	33.51
	(55 09)	(44 91)		(4.99)	(95.01)	
Bullock	207.85	39 92	247 77	0.31	24.87	25.18
	(83.48)	(16.52)		(1.62)	(98.38)	

NOTE : Figures in bracket indicate the respective percentages of the total.

The cropping pattern may broadly be divided as . (a) kharif cropping ; (b) rabi cropping ; and (c) sugarcane.

The results show that the proportion of area under kharif cropping did not vary much with holding size (Table 3 on next page). It did not vary with the type of farm either. However, area under kharif cropping which includes, generally, low value and short duration crops is more on bullock holdings than on tractor ones in all the cases. Cultivation of such crops need less intensive farm operations. It was lowest, 24.57 per cent, in case of medium size tractor farms while the highest was 38.60 per cent for large sized bullock farms. Maize and fodders were the main crops during karif season. Other crops during this season were accountable for a small percentage of area under them except paddy in case of large sized farms. The percentages of area under paddy on large sized bullock and tractor farms were 14 13 and 6.75 respectively. The fodder requirements on tractor and bullock farms did not differ much even though the number of draught animals on tractor farms were found to be somewhat smaller. It was so because tractor farms maintained larger number of milch animals.

During rabi season high yielding varieties of wheat were the major crops grown on tractor and bullock farms in the three size groups. The percentages of areas under high yielding varieties of wheat on medium and small sized farms, tractor as well as bullok farms did not differ so much unlike large farms which were 21.10 and 33.67 per cent respectively.

Wheat is a highly remunerative crop This needs good seed bed for healthy germination. It needs higher doses of fertilizers and irrigation for proper growth This requirement can be more effectively met with the use of tractor with better power potential on farm Local/tall varieties of wheat were grown by small and medium sized bullock farms only and the coverage was not significant enough for any comment. Other important crops were fodder crops during rabi season.

The area under sugarcane varied from 26.22 to 30.63 per cent for large and small sized tractor farms respectively. The proportion of area under sugarcane-planted and sugarcane-ratoon also varied considerably.

The results pooled show that sugarcane and Wheat were equally important crops. The percentages of areas under these two crops taken together were 61.46 for tractor farms as compared to 53.39 per cent on bullock farms. Apart from the use of higher dose of material inputs sugarcane and wheat crops needed labour intensive farm operations and higher level of irrigation.

Percentage of area under sugarcane on large sized tractor farms was 26 22 of the total cropped area out of which 16 54 per cent was under sugarcane-planted and the rest 9 68 per cent under sugarcane-ratoon. On the other hand large size bullock farms had 28.69 per cent of cropped area under sugarcane but sugarcane-planted and sugarcane-ratoon covered different percentages of areas being 23 21 and 5 48 per cent respectively. It was further observed that areas under high yielding varities of wheat for tractor and bullock farms of large size were 33.67 and 21.10 per cent respectively. This striking difference in the areas under wheat between these farms reflects upon the technology adopted by tractor farms These farms devoted greater proportion of area under sugarcane-ratoon which matures earlier than sugarcane-planted, harvested this crop and the land so vacated was used for growing high yielding varieties of wheat This could be possible with better power potential on large sized tractor farms as the interval between harvesting of sugarcane and sowing of wheat is very short considering the seed bed requirements of this crop Such a cropping was difficult on bullock farms as the proper preparatory operations could hardly be undertaken with bullocks. For other size classes total area under sugarcane was higher on tractor than on bullok farms.

TABLE 3

Cropping Pattern on Tractor and Bullock Farms

Crop	Percentages of gross area sown under different crops							
	Small		Medium		Large		All Farms	
	Tractor	Bullock	Tractor	Bullock	Tractor	Bullock	Tractor	Bullock
Kharif Cereals	9.46	10.08	8.38	9.46	11.75	18.77	10.37	14.72
Maize	7.97	7.22	5.56	7.33	5.00	4.64	5.64	5.82
Paddy	1.49	2.86	2.82	2.13	6.75	14.13	4.73	8.90
Cotton	1.37	2.20	1.81	2.65	2.23	4.01	1.96	3 34
Kharif Fodders	13.83	16.69	14.38	13.31	13.08	15.82	13.58	15 17
Kharif cropping	24.66	28.97	24.57	25.42	27.06	38.60	25.91	33.23
Total Sugarcane	33.63	27.04	32.40	27.86	26.22	28.69	29.24	28 20
Sugarcane	23.29	19.89	22.03	17.51	16.54	23.21	19.25	21.01
Sugarcane (Ratoon)	10.34	7.15	10.37	10.35	9.68	5.48	9.99	7.19
Rabi Cereals	32.75	33.00	33.68	33.98	37.37	27.22	35.53	30.09
Total wheat	31.01	30.01	30.23	30.40	33.67	21.10	32.22	25.19
Wheat-HYV	31 01	29.24	30.23	29.23	33.67	21.10	32.22	25 19
Wheat-local	..	0.77	..	1.17	..		.	.
Wheat gram	..	0.17	1.45	..	.	..	0 43	1.98
Gram	1.74	2.22	2.00	2.41	3 70	2.74	2.88	2.92
Rabi fodders	7.97	8.00	5.59	8.39	5.13	3.38	5.72	6.60
Pulses	1.00	1.51	2.53	3.69	3.46	5.27	2.78	1.97
Others	..	1.51	1.23	0.67	0.75	0.21	0.76	0.79
Grand Total	100.01	100.01	100.00	100.01	99.99	99.99	99.99	99.49
Total fodders	21.80	24.69	19.97	21.70	18.21	19 20	19.30	21.42

Areas under fodder crops (rabi and kharif) were more on bullock farms than on tractor farms in all the cases but differences were not appreciable. It is notable that areas under fodder crops were found to be lesser during rabi season than those during kharif season in all the cases. This does not imply the change in fodder requirements but supply of fodder is supplemented by sugarcane during this season.

Cost and returns

Costs of cultivation per hectare were worked out for sugarcane and wheat crops which are the important crops of the area

Resources in respect of seed, manures, fertilizers and insecticides were used to more or less the same extent by tractor and bullock farms, difference being narrow. The gap is wide in respect of expenditure on irrigation and labours. Tractor farms spent 5.81 per cent of their resources on irrigation in respect of sugarcane crop as against 15 52 per cent on bullock farms On the other hand, tractor farms spent 55.48 per cent of their resources on labour as compared to 36.74 per cent on bullock farms.

Cost of cultivation of sugarcane per hectare was Rs. 3,722 on tractor farms as compared to Rs. 3,384 on bullock farms in small size class. The costs were respectively Rs. 3,776 and Rs. 3,100 in medium size class. But in large size class cost of cultivation of sugarcane on tractor farms was Rs. 3,511 as compared to Rs. 4,093 on bullock farms. Overall sizes cost of cultivation on tractor farms was Rs 3,743 in comparison with Rs. 3,323 on bullock farms

Higher costs on tractor farms were associated with higher returns from sugarcane. Tractor farms earned profits for the accepted concept of cost whereas bullock farms were losers, losses varied from Rs. 150 in case of medium bullock farms to 743 for large bullock farms.

Tractor farms allotted their resources almost equally to materials and labours being 48.87 and 47.90 per cent whereas distribution was 38.58 and 54.84 per cent respectively on bullock farms.

The cost of cultivation of wheat, follows the pattern of sugarcane crop while comparing tractor and bullock farms. The cost of cultivation was higher on tractor farms as compared to bullock farms in small, medium and overall sizes but the costs on bullock farms were higher in large size farms.

Higher costs of cultivation were associated with higher returns on tractor farms in respect of wheat crop also as compared to bullock farms. Costs were lower on large sized tractor farms and returns were also higher. Tractor and bullock farms in all sizes except large bullock farms earned net returns from wheat crop ranging from Rs 238 on medium size tractor farms to Rs. 131 0 on small tractor farms.

Thus, the use of tractor on farm resulted in superior cropping pattern needing intensive use of material inputs, reduces direct employment of human labour on farm, promotes possession and utilisation of more power through mechanical sources as compared to bullock farms. Higher cost of cultivation of sugarcane and wheat on tractor farms are, generally, associated with higher returns yielding higher net profits from these crops. However, gross farm produce, all crops inclusive, pattern of utilization of tractor on farm and employment opportunities provided by it and its effects in secondary and tertiary sectors need further probe and will provide better insights into the social and economic implications of this machine. Such broad-based studies need be conducted. □

Consumer Protection

Dr. B. R. S. Gupta
Freelance Journalist

AT PRESENT, the consumer has no pride of place and is no longer a sovereign. The consumer influences consumption and production as well as ock in trade. Viewing this, there is a great need or providing relief to the poor consumer in the prent circumstances of increasing prices of essential commodities. The poor consumers should also be involved in every fight against the soaring prices and shortages. Vigilance committees should be formed to see that very consumers got his share of daily use items. Consumer protection should not be confined to essenial goods of life only, as some think. The dministartive machinery through honest implementaion of the government's laws and rules to protect the eople's interest is as important aspect of the duty s the consumers through their eternal vigilance. For his, educating the masses with the benefits of the onsumer protection laws and rules framed by the overnment is essential. Central and State Government's field publicity and public relations department nd other mass media like A.I.R., and T.V. could be enerously used for this purpose. A basic knowledge of the consumer protection laws should be included n the curricula of social studies in schools and in the raining and other programmes of workers.

Synchronising with this process of mass education, he government should arrange to call an all-India *ocial Parliament* in New Delhi on the line hinted by Mr. George Fernandes for workers' Parliament. Meanwhile the government should prepare a time-bound plan of six months during which the states should be requested to hold mini-parliaments at district and the panchayat evels. The discussions at such meets should be processed by the state government and forwarded to the entre with their comments and suggestions, and these ould be the basis for the all-India Social Parliament. This idea, worked out with some careful planning, vould lead the government ultimately to the institution of top Ombudsmen as they have now in Sweden and other countries. We need a consumer Ombudsman like Workers' Ombudsman and parliamentary Ombudsman, is a check on our bureaucratic administration to ensure hat the laws and rules do not get adulterated and disorted by the time they reach the people. This will inally take us to Jay Prakash Narayan's total revoluion.

Ombudsman Watch dogs

Needless to add, that the observation made by Delhi High Court recently allowing a petition by a rubber company concerning a demand of 'deficit' excise, conirms that consumer rights are damaged by several trade malpractices. The court said that it was 'high time' someone in authority considered the propriety of introducing the institution of Ombudsman in industry as watchdogs over cost-price relationship and quality control to protect the vital consumer interest. 'In fact consumer today is a victim of all the malpractices of producers and the middlemen The cost-price relationship is haphazardly determined. There is hardly any effort at controlling the quality of products. Even the ISI touches the fringe of the problem.

There should be a strong sense of discipline and restraint among members of the trade as their activities exercise a vital influence on the life of the people Maximisation of gains is a legitimate entrepreneuria pursuit, but without social content, it amounted to profiteering which is illegal and anti-social. All ove the world the concept of profitability is being radicall altered by considerations of the social justice and i was absolutely essential that the entire economic acti vity of India is invested with a social purpose. Th trade has not used the freedom allowed in India par ticularly to the distribution sector of the economy, i a proper way.

The interests of the consumers had always bee ignored owing to the sheltered markets which provide little competition. The government has to step i effectively to check malpractices in the trade and t protect the defenceless consumers The current eco nomic programme of the government gave the highe importance to consumer protection. Punitive and dete rent action would be taken to achieve this purpos The government has decided to bring about a thoroug overhaul of the entire distribution system by drasticall reducing the number of intermediaries and eliminatin the monopolists in trade. There is a lot of scope for th reduction of prices by cutting out the extravager expenditure on advertising and sales promotion. Th government is determined to increase production b harnessing the unutilised capacity in industry, especiall in the small scale sector where only 30 to 35 per cer of the installed capacity is utilised. Legislation regard ing fair trade practices and the protection of the con sumer's interests must receive full co-operation fro the traders They must be satisfied with a legitimat margin of profit and must exercise strict discipline t stay away from anti-social acts. It is needless t emphasise that the present Government has shown lot of abiding concern for protecting consumer interest The practical demonstration of this thinking is seen i the full-fledged railway budget presented to the Parli ment with the improved facilities and conveniences t

the largest sections of the consumers. The country is well poised for a successful take-off stage in the building up of a good cosnumer resistance movement to enable the people both to exercise their rights and discharge their responsibilities.

The biggest exploiters of the consumers in Indian are not the large scale producer of consumer goods but those enjoying a monopoly in a large number of fields like Railways, Civic and Public Sector Undertakings. Their way of functioning needs no elaboration. But no body in the government seems to get worked up and even if anybody does, it serves, no tangible purpose. Every type of activity goes on. But imagine the uproar if any private undertaking has been responsible for even a fraction of the damage or inconveience in any field of operation. Surely, drastic action is needed to beef up the innumerable government undertakings or civic bodies which at times harass the public to whom they are supposed to serve. Anyone, however, who knows would laugh even at the mention of such action. Indeed the public would be thankful if the seemingly tireless protectors of the consumer do more serious thinking to find solutions for a wide assortment of crimes from exploitation to adulteration.

Consumer movement

The Rajinder Sachar Panel has recommended various measures to protect the interests of the consumers against repacious producers who claim qualities and virtues for their products which do not bear any scrutiny. Some advertising and promotional efforts are no doubt misleading. But, surely, the sad plight of the Indian consumer is attributable more to his luck conciousness and the absence of the organised consumer resistance than to advertisements and promotional gimmicks. It is queer that in the 600 million strong Indian consumer market representation given to the consumer on statutory committees and advisory bodies is often weak. And even on those organisations where the consumer has fractional representation, he is almost always outvoted by the industry and trade whose dominance is not easy to challenge owing to the lack of a strong consumer movement.

The doughty role played by organisations in Europe and the United States in developing consumer movement and pursuading the authorities to initate legislation for consumer protection has assured the consumer his rightful place in a market economy. The movement initiated by *Ralph Nader* in the United States had put a healthy fear of the consumer in the minds of manufacturers of products ranging from sausages to automobiles. The example of Japan where expert consumer bodies have not only pointed out defects but suggested improvements in a variety of products to the advantage of both markets and users is edifying. As regards our country, the uninformed but interested hidden persuaders would seem to think that what was needed was a rapid increase in the production of all varieties of consumer goods and quality, distribution and price would take care of themselves. Without shortages of essential commodities, hoarding, adulteration, profiteering and blackmarketing, the ordinary consumer has no access to information, no right to protection, and no avenues of redress even when he knows that he has been harmed by high voltage, but questionable sales gimmicks and inaccurate but plausible sales literature.

Adulteration

A recent random sampling has shown that 92 per cent of the cheap sherbats sold around municipal schools in Bombay were adulterated. Prohibited colours and sweeteners which were used in the manufacture of those drinks were certain to affect the health of school children. Tests have also revealed that 32 per cent of the loose spices and condiments (chilli powder in particular) sold in a particular area were adulterated and unfit for human consumption. While food and drink adulteration has become normal practice in our big cities, a recent test of surma, an eye cosmetic used by men and women, has indicated the presence of one to five per cent of lead in the samples which can do irreparable harm to the eyes.

The recourse to short weights and measures earn crores in illegal profit for the trade has been conceded even by the government agencies without taking sustained and effective steps to prevent those unscrupulous practices. Public interest in testing of all consumer goods for quality, purity and the standard should only become standard practice but be backed by enabling legislation. If the consumer's right to safety and information is basic and natural, then the right to choose (from a variety of products and services) and the right to be represented and even to be consulted should be made enforceable. The infant consumer movement in the country would do well to concentrate on educating the citizens of their rights in the market. Basic literature on the subject is often lacking and the media plays a less than robust role in upholding the consumer. If the take-it or leave-it nature of transactions in the Indian market is to end, the consumer must assert himself.

Consumers in the West are more concerned with the changing concept of social responsibility of business. Now customers may well insist that an industry should not pollute air or water. In India, however, one is still concerned about what and how much he buys for a rupee. Today, the gullible consumer is quite hopeless in the face of the marketing power of giant corporations. There are several infringements on his rights through malpractices, namely, adulteration and sub-standard quality of products over-charging, deceptive advertising, mail order fraud, variations in the contents of pack and the like. The *rise in the prices* of essential items of consumption is a major problem which a consumer faces today. Both private sector and the public sector are responsible for this state of affairs. *Medicines* like penicillin which costs hardly 25 paisa to 50 paisa is sold by the public scetor at a price higher by four times. The price of the Indian steel is much higher than Japan's. The excessive expansion of money supply, labour unrest, shortage of electricity, higher rates of interest, hoarding, higher overhead costs of public sector enterprises and underutilised capacity of several enterprises combined to create a climate that keeps continuing pressure on prices which is a major source of discontent among all sectors of the people. *Adulteration of food,* which is a major grievance of consumers', is done through mixing sub-standard stuff, substitution, abstraction etc. The present way of living and increasing use of additives have further aggravated the problem of adulteration and sub-standard quality.

Reasons for adulteration

Most Indian consumers can not afford to buy branded articles in the packaged form and that most unscrupulous traders are 'unable' to sell things of good quality in loose form. Organised marketing with honest advertising and proper distribution of branded goods—is yet to cover the entire country in a big way. The recent finding of the Public Analyst Department of the Government of U.P. about the extent of adulteration are revealing. Of the 409,200 food samples collected by the food inspectors in the state during the last 13 years, as many as 103,044 were found to be adulterated. It is because of the following reasons :

Rising trend of prices ;

Laxity in the enforcement of laws ;

Lack of sustained contact between the buyer and the seller ;

Absence of a proper code of business conduct, etc.

While consumerism has not yet become a mounting force here as in the U.S., Sweden, Newzealand and the U.K., there is no doubt a need to strengthen the social movement. It is not just an American 'fad' but something that can help protect the consumer from unscrupulous trade malpractices. Consumer dissatisfaction cannot be taken highly which certainly harms business as much as the consumer. Consumerism calls for practical steps. They are :

Widespread consumer education is a must for which there is a need for network of media-communications, including the press, radio and the Television and folk-media so that more and more people may be aware of their rights.

Without increasing the production of consumer goods ensuring their availability through proper distribution helps the consumer.

Consumer Guidance Society of India : is a non-profit making organisation established in 1966 and registered under the *Societies Registration Act,* having a total membership of 2,000 persons. The aims of CGSI, are 'to protect the rights and interests of the consumers, provide them with information and counsel, take up their complaints with the offending party and/or the authorities and help them select goods and services which are a fair return for the money they spend'. It publishes a Journal called *'Keemat'* to educate the consumers. There are several other organisations in the country to protect the interest of the country's consumers, but somehow they are helpless and the consumer continues to be exploited.

There are several organisations in the country to protect the interest of the country's consumers, but somehow they are helpless and the consumer continues to be exploited.

While the decision to set up a federal body to look into consumer problems is welcome, the nascent consumer movement in the country has a long way to go. Even government bodies and departments which are supposed to look after the consumer's interests are usually lackadaisical in their functioning. For instance, surveys have established that the consumer gets cheated of hundreds of crore of rupees because of short-weighing by the traders. But there is no effective checking of weights and measures to prevent this. Perhaps even government departments and agencies can be made to sit up only if there is grass-root support for a strong and sustained consumer movement. A body imposed from the top can hardly provide the broad base of energy and interest needed to bring erring industry, trade and government functionaries, to book. In final analysis, however, it is only the consumer who can keep himself. A consumer who does not stand up for his rights should not complain when everbody walks roughshod over him.

Widespread consumer education is a must for which there is a need for network of media-communications, including the press, radio and television and folk-media so that more and more people may be aware of their rights.

Consumer Affairs Ministry

To ensure availability of goods and services across the country, particularly essential commodities, at a given price and in given quantities, a separate Ministry of Consumer Affairs should be set up. This is one of the major recommendations of one day Workshop on 'Consumer Rights and Distribution System' organised by the Institute of Marketing and Management in collaboration with the Fair Trade Practices Association, the Indian Consumers Union, The Consumers' Guidance Society and the Mahila Dakshita Samiti in New Delhi. The Workshop has also recommended that the essential commodities should be named and made available to the citizens at a fixed price with a fixed margin to the trade. If necessary, these comodities should enjoy price support from the government. For this purpose the government may set up a Prices Commission. Since Civil Supplies is a state subject, the government should take steps to have it listed in the 'concurrent list' such a step will enable the Central government to ensure price administration as well as supplies of goods on a country wide basis. The Workshop also recommended that Consumer Advisory Councils should be set up at the centre, state, district and block levels, keeping in view the location of production units and consumption centres.

There is greater need for vigilance with regard to adulteration and quality control on the part of the government. Such quality ensuring organisations as the ISI Agmark, etc, should be made mandatory. Punitive action should be taken by the concerned quality ensuring authorities against defaulters. Such powers, as may be required, should therefore be vested in the quality marking bodies. □

Power for Small Industries

G. R. Dawar
Deputy Director, Research and Evaluation Division, Rural Electrification Corporation Limited, New Delhi

POWER IS the yardstick to estimate the level of economic prosperity and standard of living in any urban or rural establishment. With the fast growing power generation capacity and widespread transmission and distribution network, the consumption of power has so far been comparatively higher in cosmopolitan centres and gradually developing industrial and agro-industrial townships than in urbanised countryside and rural areas.

In a vast country like ours with thick forests, steep mountainous ranges marshy swamps, zig-zagging rivulets, difficult terrain and inadequate transport facilities, electrification of nearly 6 lakh villages including overgrown hamlets is apparantly a difficult task. Realising its growing significance for agriculture sector, top priority has been given by the Government to rural electrification programme with greater emphasis on energising pumpsets in farflung but potential areas Various agencies like Rural Electrification Corporation, State Electricity Boards, Commercial Banks and Life Insurance Corporation have been made to move in the direction towards achieving this goal. But due to certain obvious bottlenecks both at the financing stage where different financial institutions involved and at the execution stage when SEBs are supposed to shoulder the overall burden, achievements both in physical and financial terms continue to lag far behind the targets.

Rural electrification has acquired added importance because of its vast capacity to accelerate the rural industrialisation programme resulting in the creation of more employment opportunities in rural areas; thus checking the growing migration rate from rural to urban centres.

Looking at the scope of employment opportunities, the relative position of large scale organised manufacturing sector versus small-scale agro-based industries in unorganised sector remains so far unaltered. Despite a mani-fold expansion in the capital stock and the output potential of large-scale industries, hardly 2.8 per cent of the country's working force, as per 1971 census, is engaged in this sector compared with 6.6 per cent in decentralised sector. Next to agriculture which employ nearly 69.7 per cent of the national working force, the decentralised sector continues to remain the second largest source of employment. The basic issue, therefore, is : what role availability of power to agro-based small-scale industrial sector can play in creating additional employment opportunities in backward areas, stem the migration rate from rural to urban establishments and thereby ensure rapid economic development.

Madhya Pradesh is the biggest state, and ranks second in population after U.P. As per 1971 Census, 87.5 per cent of its total working population lives in rural areas. Of the total number of rural workers, nearly 89.0 per cent are dependent on agriculture alone against the overall State average of 79.4 per cent. So the State has a predominantly agriculture based economy burdened with growing population. Inspite of this heavy concentration of workers in agricultural sector, another 3.2 per cent of its working population in rural areas are engaged in rural-based household industries. The rural-urban ratio of such agro-based household industries is approximately 76 : 24; this implies heavy dependence of working rural population on such agro-based industries. The overall distribution of working population both for rural and urban areas is given in Table-I.

The growing dependence on agriculture and household industries for employment opportunities in rural sector implies the need to further strengthen and develop both these fields of the State. At the same time, a substantial reduction in the dependence of labour force on agriculture in rural areas from the current level of 88.95 per cent appears absolutely essential.

There are mainly two ways to achieve this objective. More workers can be absorbed in the agriculture sector by adopting modernised farm technology to enable farmers to shift from mono-cropping to multiple cropping pattern. Secondly additional avenues of employment can be created through development of labour intensive power-based small and agro-industries.

The third approach, widely proposed by large-scale industrial sector, has been to invest in capital-intensive industries. But the basic objection to such an approach is the growing cost of creating new jobs. A survey conducted by the Industrial Credit and Investment Corporation of India (ICICI) collaborates the view that of the 625 joint stock companies assisted by it, the average

TABLE I

Percentage Distribution of Working Population in Rural and Urban Areas in Selected Sectors of M.P.

Total working population of which :	Total All India	Total MP	Rural All India	Rural MP	Urban All India	Urban MP
(a) Engaged in agriculture	69.67	72.42	82.30	88.95	11.10	12.3[illegible]
(b) Engaged in household industry	3.52	3.64	3.21	3.16	4.97	7.0.
(c) Engaged in other than household industry . .	5 94	3.04	2 29	0.80	22 86	18.7[illegible]

investment per job worked out to Rs. 37,204 in 1972-73 to Rs. 39,316 in 1973-74. Among different industries, it varied between Rs. 16,167 to Rs. 97,251. In industrial units like chemicals, petro-chemicals, power generation, transmission and distrbution, automobiles, non-ferros metal products, cement, pulp and proper products, etc., the average investment-employment ration amounted to over Rs. 40,000.

But in rural areas, the extent of investment involved in creating additional employment opportunities has been considerably less. The power based small-industrial units in rural areas by their very nature do provide a nucleous around which other socio-economic activities of the region tend to crystalise. As these are generally consumer-based or processing units mainly relying on the locally available raw material, the absorption of locally available agriculture labour either in agro-based units or in nearby rural hinterland of the expanding urban township could provide adequate scope for additional employment.

Besides the need for other essential inputs and infrastructural facilities like transport facilities, water supply, availability of skilled labour and managerial personnel, the major basic requirement is the continuous power supply to ensure viable running of small-agro-based industrial units in rural areas. This, in other words, means intensive as well as extensive electrification of villages in the State.

Madhya Pradesh, though endowed with vast agriculture potential, mineral resources, industrial and forest wealth, lags much behind other States both in terms of rural electrification and agro-based industrial development. As a consequence, 35 out of the 43 districts (now 45 districts) were notified as industrially bac ward by the working group (Pande Committee) consi tuted by the Planning Commission. Sometime back, tv new districts namely, Rajnandgaon and Bhopal, we carved out but for the purpose of analysis these ha not been included. Excluding 8 industrially develope districts, the remaining 35 districts categorised as "I dustrially backward" then have been further classifi under "three categories" on the basis of their level *industrial development and agriculture potential.* D tails of districts classified under developed and bac ward categories are :

Developed Districts : Gwalior, Indore, Khandw Ujjain, Jabalpur, Satara, Durg of and Shahdol.

Backward Districts :

Category A: Bilaspur, Dewas, Hoshangabad, Man saur, Morena, Ratlam, Raipur and Vidisha.

Category B :—Balghat, Betul, Chhindwara, Damo Guna, Narsinghpur, Raigarh, Sagar, Sehore and Seon

Category C :—Bastar, Bhind, Chhattarpur, Dati Dhar, Jhabua, Mandla, Morena, Panna, Rajgarh, Ra sen, Rewa, Shajapur, Sidhi, Shivpuri, Surguja an Tikamgarh.

For balanced development of different regions i general and accellerated growth of backward regio in particular, establishment of both large-scale capit intensive and traditional small-scale power based in dustrial units has been suggested. Although throug dispersed locations of large-scale public sector indu trial projects, such as Bhilai Steel Plant, B.H.S.L and Korba Industrial Complex, attempts have bee made to speed up the development of backward po

TABLE-II

Economic Characteristics of Developed and Backward Regions of Madhya Pradesh

Regions	Percentage of population covered	Sex Ratio* Total population	Sex Ratio* Working population	Participation Rate	Percentage of worker engaged in Agriculture	Percentage of worker engaged in Industries
Developed Region .	23.33	1073	2741	36.79	70.13	10.99
Backward Region :						
Category A	23.25	1048	2645	38.02	81.69	5.04
Category B .	20.82	1058	3024	37.16	77.86	7.87
Category C .	32.60	1068	3816	35.46	85.61	3.94
Overall . .	100.00	1062	3061	36.72	79.42	6.68
	..	1075	4763	32.92	69.67	9.46

*Male for 1000 females.

kets of the State, but the concentration of private big industrial units in developed districts has for long belied the hope of their speedier progress.

The level of development and industrial potential of different districts depend on various basic socio-economic characteristics like percentage of working population, those engaged in agriculture including cultivators and agricultural workers and in household and other than household industries. Table-II presents the basic economic characteristics of developed and backward regions.

Table-2 shows that in developed region, the percentage of those engaged in agriculture are lower than in backward regions. Similar trend can be observed in industrial sector too. Even if one analyses the data available for both the sectors for the country as a whole, the position as noted broadly conforms to what has been observed in developed region of Madhya Pradesh State. It can thus be analysed that the relatively higher sex-ratio of total population of the developed region is predominantly due to its industrial character where the men-folk have gradually migrated from the backward region of the State leaving behind their women-folk, thereby resulting in higher dependent-ratio in backward region.

In backward region, with the relatively higher percentage of working population engaged in agriculture and relatively low pressure on small-scale industrial sector, the obvious solution lies in promoting power-based small and agro-based industrial units in backward areas. In the current circumstances, the solution as suggested, appears to be the only remedy to slowly mitigate the already growing pressure of rural workers on agriculture and allied activities.

As against putting greater reliance on development of power-based small industrial units in backward region, the approach followed for long has been to invest more in developed region towards establishment of new industrial units, big as well as small, by the local entrepreneurs and also under the State-sponsored industrial programmes. For sometime, no need was felt to encourage the growth of such units in less developed areas as well to bring them on par with developed areas with a view to reducing inter-regional imbalances

On the basis of available data analysed over a period of 10 years, it is observed that the growth of industrial establishments is sufficiently skewed towards the developed region as it is endowed with sufficient potential to sustain a higher degree of industrial growth ; whereas districts comprising relatively backward region of the State though rich in terms of agriculture potential and mineral potential continue to remain backward. One may agree that such a situation has persisted and remains so due to lack of necessary infrastructure in the form of capital investment, insufficient communication and marketing facilities. But the major contributing factor in the process has been the inadequate power network to speed up the growth of power-based small industrial units.

To accomplish this task, steps have been initiated in recent years by different financial institutions like the Industrial Finance Corporation of India (IFCI), Rural Electrification Corporation (REC), National Cooperative Development Corporation (NCDC), Industrial Credit and Investment Corporation of India (ICICI), and such other institutions at the national level and similar agencies at the State level to provide credit facilities and financial support in order to develop the basic infrastructure to speed up the development of backward areas. The key factor has been the provision of power supply by erecting HT and LT lines upto industrial sheds. In this direction, the REC over the last 5 years has contributed tremendously in not only financing rural electrification projects with emphasis on power supply to small power-based industrial units, but on affecting improvements in the existing power system also. While making such efforts high priority has been attached to relatively backward district/regions to boost up their industrial potential. On the basis of analysis of the growth of low tension agro-based industries, one finds the co-efficient of skewness in favour of backward regions. The number of rural electrification projects sanctioned in backward region has been more than those in developed region and consequently more than the number of power-based small and low-tension industrial connections. The nature of small industrial units likely to come up are : rice hullers, flour mils, cane crushers, cotton ginning units and such other power-based units

However, a lot of spadework and consistent efforts are needed to motivate the rural leadership towards establishing small-scale power-based industrial units. This would go a long way in gradually reducing the pressure of rural workers on agriculture sector besides creating new avenues for absorbing idle working force in the rural vistas of the State. It would not only help check the migration rate but would also ensure balanced and integrated development of different regions in the State.

For a country like ours, to lay emphasis on development of heavy capital-intensive industry at a high cost of over Rs. 40,000 per worker would only mean putting heavy financial burden on the developing economy ; whereas, creation of additional employment avenues through promotion of power-based small industries in rural areas would cause very little burden on the financial exchequer. Besides it is beyond our country's capacity to mobilise investment of such magnitude or capital intensive industries. Moreover, it has been observed that any increase in capital intensity of heavy industrial units results in relative decline in productivity. While labour productivity rose from 100 in 1946 to 164 in 1964, capital productivity during the same period declined from 100 to 25.4 only. Even with 1959 as the base year, the index of labour productivity rose to 118.4 in 1964 compared with the decline in capital productivity to 62.1.

Hence, for a backward region endowed with a typical pattern of factor endowment, adoption of labour intensive techniques involving low capital cost mainly in rural areas, can only increase employment opportunities, reduce regional imbalances, and check migration rate to urban areas. Provision of electric power, as an input for rural-based small industrial units, would thus substantially contribute towards development of backward regions of Madhya Pradesh and such other similarly placed areas all over the country □

Trade Or Aid

Shyam Nath Nandkeoliyar
Head, Deptt. of Economics, C. S. Janata College
Gaya

Analysing various aspects of trade expansion in the developing countries and comparing them with the problems, arising out of foreign aid, to be faced by the developing countries like India, the author highlights the need to be self-reliant in the development of the country

FOR A FASTER development of under-developed countries, foreign exchange is of vital necessity. Trade and Aid : both the processes are to earn foreign exchange, motives are to get rapid development; and goals are of self-sufficiency. In spite of the fact that both the aspects differ in nature both may be interrelated in the process of development. To make it more clear, in the initial stage of development, when under developed countries are less resource-endowed, foreign aid helps in increasing the production and export, and, out of the export earnings loans are paid. But as development gets its momentum, the reliance upon foreign aid must be diminished and underdeveloped countries' efforts should be directed to expand their own trade. It must be noted that, "For the developing countries as a group, debt service rose by 9 per cent per annum in sixties faster than their earnings from the export of goods and services, which grew at around 7.5 per cent, and their GNP, at 5 per cent. By the end of the decade, however growth rates had increased to close to 15 per cent for debt service, over 10 per cent for the export earnings and around 6 per cent for GNP." This shows that the cost of aid is much higher. The expansion of trade and gross national product is increasing in less proportion. Thus, it seems highly justified to consider trade or aid for a rapid development.

Since the inception of the plan, foreign aid has been playing a postive role in India, in spite of the action taken by government in promoting exports. In the stages of development, during the Fourth Five Year Plan, India's policy contained less reliance on foreign aid but in the Fifth Five Year Plan the contention has been modified and India showed her eagerness for foreign aid. But the aid has become so costly that a large proportion of export earnings is absorbed in meeting debt. Total debt servicing in India has increased from Rs 23.8 crore in the First Year Plan to Rs. 2445 crores in the Fourth Five Year Plan. In 1974-75 and 1975-76 alone, debt-service charges had been Rs. 626 crore and Rs 700 crore respectively.

Under the circumstances it shall be highly fruitful for a country like India to expand its trade than to seek aid, because trade overcomes many problems of the country.

In India much of the resources are unutilised. If India concentrates herself towards the expansion of trade, she will have to be keen towards utilisation of domestic resources which are lying idle or which have been neglected for enough export earnings. With the expansion of trade, India will be in a position to exploit the resources utilised so for.

Foreign exchange helps in increasing the production and export of the country and thus brings in development. If an underdeveloped country or India depends upon foreign aid, development will take a longer time, because there are problems of low quantum and uncertainties in getting aid In the expansion of trade, uncertainty for fund is not visible. The increase in trade or export will fetch India enough earnings to be utilised in the sectors which are most fruitful to her. In this way, the purpose of aid of faster development will be fulfilled with the increase of trade in a more solid way.

India requires both maintenance imports and development imports. The trade statistics of India depicts the fact that she has been in adverse balance of trade i.e. imports exceeding exports. These exports are met after export earnings by withdrawal from external balance or foreign aid. If India expands her export rapidly, she will be in a capacity to meet the import, establish capital intensive industries, minimising the reliance on foreign aid and fostering a rapid development

In aid, India will have to depend upon foreign countries for the development; in trade, India will be on self-footing for the development. With aid for the development of any project, India will have to depend upon the discretion of foreign countries as has been with the case of Bokaro Steel Limited, with trade she will be free to establish the development of project of any sector whether private or public sector. Moreover, with the expansion of trade, she will acquire capacity to eject the industry without any delay and her goods in the market will be sold at a lower price which in the case of Foreign aid increases the cost of production

Trade will solve India's problem of price differences Most of the aid to India is purchase-tying. That is to say that the aid giving countries direct the aid receiving countries to purchase goods from her under purchase-tying It has been generally found in such cases that aid-giving country charges high prices of the same goods from aid-receiving country in comparison to other countries the aid of which is not purchase-tying. This price difference vanishes, if India expands trade She will be in a position to purchase the goods from where it gets at a cheapter rate Moreover, in purchase-tying, it has been also

found that if certain qualities of goods which aid receiving countries require are not available in purchase-tying country, the former has to use inferior quality of goods, which in the expansion of trade will not be a compulsory one.

Moreover, trade stimulates the growth of the economy. It raises the national product of the country, per capita income savings rate of investment etc. In a nutshell, with an increase in exports, a country comes close to self-sufficiency.

On the other hand, it is to be noted that aid brings many liabilities to the country They are : In the foreign aid, aid receiving countries have to depend always upon donor countries and have to obev their conditions in order to obtain foreign aid. For example the USA provides aid mostly to anti-communist countries and the USSR provides aid to anti-western countries. Aid receiving countries in order to get aid have to be onesided, thus defeating the policy of non-alignment.

Even the institutions which provide aid put certain conditions and aid receiving countries are responsible to fulfil the conditions in order to obtain aid. For example, 'As early as 1949, the IBRD told Chile that it would have to take anti-inflationary action to receive aid. In the 1950s Peru was convinced not to accept short-term suppliers credit .. .."

Thus, aid receiving countries in order to obtain aid not only have to depend upon donor countries or institutions, rather their responsibilities come to abide with the conditions.

The aid which come in the form of interest bearing loan are to be paid. The aid-receiving country have the responsibility to make debt-repayment. In India, a large proportion of aid is of such type and thus, it bestows much pressure on the development of her economy. The responsibility of meeting debt services in India has minimised her domestic savings and National Income as well as export earnings.

In the short run the responsibility of debt services gives much pressure on export earnings because debts are to be paid out of export earnings. In India while in 1952-53, the total export earnings absorbed by debt services was 1.1 per cent, it has increased to 2 cent in 1973-74. Thus, the responsibility of services, shatters the basic ingredients of pros which can come in a more rapid way throu creasing the foreign exchange reserve and ut these reserves for development purposes. In cor son to many other developing countries, the rati debt services payments to exports of goods and se in India is much higher. In 1971, while this rati 19.6 per cent for Chile, 21.1 per cent for Arge 12.1 per cent for Sudan, 11.1 per cent for Sri L it was 23.5 per cent for India.

Foreign aid brings the responsibility not only rapid and proper utilisation of it but also for t the measures, so that it may not create inflati situation in the country. If the aid is not utilis a proper way, it raises the value of the product makes the goods beyond the common reach of people. There is every chance, even if aid is proper utilised, of the creation of an inflati situation in the country because of massive flow funds and increase in the purchasing power of people.

Most of the aid is tied to purchases and tied projects. Under project-tying, donor countries vide aid for specific projects and aid-receiving c tries have the responsibility of utilising the aid in specific project whether it is of importance for country or not.

The flow of aid is engrossed with so many probl like authorisation and utilisation, uncertainty of etc that aid-receiving countries have to see a st development. The high dependence upon foreign keeps their projects in a steady process or growth at last raises the cost of production.

In this way, trade promotes healthy growth w dependence upon aid defects the country from independent line of faster growth. It does not mean aid is not to be taken or aid is not conductive to eco mic development of a country like India. India o to expand trade for a healthy and faster growth. should be sought in case of acute necessity and sup ment to domestic resources

20 per cent increase in Handloom Export

HANDLOOM GOODS worth Rs. 123.98 crore were exported during the period April-September of the last financial year. Last year the exports stood at Rs. 103.28 crore. The exports this year are aimed at Rs. 274 crore and so far 45 per cent success has been achieved. Contrary to earlier misgivings, handloom goods recorded a 20 per cent increase during the 1st half of last financial year, over the corresponding period year before last.

Garments are very popular among the overseas buyers and cotton fabrics and made ups, received second preference garments account for more than 70 per cent of exports. Ready made garments and natural silk goods fared better than last year

Exports of ready made garments which receive set back during 1977-78 have received and goods w Rs 71.79 crore were exported in April-September Year before last year in the same period the exp amounted to Rs. 42 76 crore. The target has b achieved despite the setback due to the recent shut out of garment imposts.

Export of cotton goods registered an encoura increase In April 78 cotton fabric items w Rs. 1.27 crore were exported and the figure shot to Rs. 198 crore in September 78. People of Lanka have been liking such goods very much.

Lunghies, and sarongs worth Rs. 4.51 crore l been exported. Export of cotton handloom made stood at Rs. 9.87 crore against Rs. 9.04 crore. silk exports brought in Rs. 4 27 crore representing increase of 31 per cent. □

New Deal For Jhummias

P. K. Bandyopadhyay
Regional Officer, DFP, Shillong

JHUMMING or shifting cultivation is an age-old wasteful practice in Meghalaya and other hilly areas of the North-Eastern Region. Jhummias slash and cut the trees with their axe in early winter. When the felled trees dry up these are burnt down. The land is not treated any further. The wood ashes are used as manure. Then the seeds are sown broadcast. Next year, they move to another place for cultivation and follow the same method. Apart from huge run-off and soil loss the yield in Jhum field is abysmally low. It is estimated that about 3,50,000 people out of the total population of over 11 lakh are dependent on shifting cultivation and about 76,000 hectares of land are annually brought under jhumming. To wean away the jhummias from this destructive method, jhum control schemes have been undertaken in several parts of the state. The schemes date back to 1974-75. To root out this practice, in a phased manner, the Soil Conservation Department, Meghalaya, has implemented a package programme of jhum control and regrouping of villages. The problems are many. The prevailing land tenure system (land is owned by a clan or the community) and the long-standing habit of the people are the major stumbling blocks. Yet a significant dint has been made. From 1974-75 to 1977-78, forty centres had been set up in all the five districts of Meghalaya, namely—East Khasi Hills, West Khasi Hills, Jaintia Hills, East and West Garo Hills districts In 1978-79, twelve new centres in addition to two extension centres had been taken up. Upto 1977-78, 2334 families had been settled permanently in different centres In the current financial year, the benefits would accrue to 640 families in 14 centres. The Soil Conservation Department has prepared land for terrace cultivation. Each family is allotted two hectares of land and in the initial years, seeds, manures and fertilizers required for cultivation are supplied free of cost. The inputs subsidy is provided on a sliding scale to farmers upto three years. Each family gets a grant of Rs. 2000 towards cost of construction materials for houses in the permanent site. Apart from paddy cash crops like coffee and rubber have also been adopted.

Jirang, a remote village in the East Khasi Hills district was also a scene of wanton destruction of forest wealth. After adoption of the jhum control project, a new village called 'New Jirang' had sprung up In 1976-77, 50 families from old Jirang were settled in the site Later 30 more families joined them. Each family was allotted two hectares of terraced land and Rs. 2000 for construction of houses. Maham Roy, an ebullient middle-aged farmer of the settled cultivation exudes happiness for the benefits of the new scheme. The word 'terrace' has already stuck deep in his mind Others are also not lagging behind. A new concept has seized the minds of the villagers. The land earmarked for them is utilized for dry terrace. Paddy is cultivated once a year. Maham Roy and his co-villagers in their jhum fields used to get very low output sometimes a few kilograms of paddy per hectare. Now in the dry terrace farm for two hectares they raise paddy between 30 and 32 quintals on an average a year, sufficient to maintain their families. They see the advantages of settled life in comparision with the earlier nomadic life. A village committee has also been set up with 15 executive members headed by a chairman. Their main function is to ensure cooperation and involvement of the people in the scheme for easier and quicker adoption of the new process. The new village with a network of drinking water supply scheme, a high school and a branch post office forms the nucleus of the emerging life pattern in the area

The people who were considered to be "left-over' of history have realised the futility of their old practices and ways of living and are determined to chart a new course ☐

Voluntary Liquidation Of Debts

Raman Patel
Sr. Correspondent, Yojana, Ahmedabad

THE RESIDENTS of Veerawada, a village with a population of about two thousand souls in Sabarkantha district (North Gujarat) formed a committee for the study of a scheme regarding liquidation of debts. The Committee's recommendations were accepted almost unanimously. The main features of the scheme are as follows :—

Persons who have not been able to repay their debt for more than three years, would pay only the capital in instalments.

The debtor would work on the farm of the creditor for a remuneration of Rs 900 per annum, out of which a recovery of Rs. 720 per annum would be made and the creditor would bear the lodging and boarding cost of the debtor. Those who would live in their own houses and meet their lodging and boarding expenses would get a monthly payment of Rs. 165 out of which they would pay Rs. 65 per month towards debt.

In case other members of the debtor, work on the creditor's farm, they would be paid their daily wages in cash, which would be between Rs. 3 and Rs. 5 with food, depending upon the type of labour

The most important aspect of the scheme is the implementation of the minimum daily farm-labour wage rate of Rs 5.50 prescribed by the State Government. ☐

BOOKS

Market Survey

Market Study for a New Industrial Project

by K. S. V. Menon ; Vohra & Co., Publishers Private Ltd , Bombay. Pages 204. *Price Rs.* 20

WITH GROWING realisation of the importance of market study for the product of a new industrial venture, there is hunt for literature available on the subject, which contains all the essentials of technique of demand projection within the framework of Indian business environment and data system. "Market Study for a New Industrial Project" by K. S. V. Menon fills up a long felt gap in the existing literature on the subject. The book is extremely useful to industrial concerns, financial institutions, consultancy organisations and all those associated with the task of market study for new industrial projects.

Part I of this small volume presents the concept and technique of market research. It includes five chapters, dealing with such theoretical aspects as study of market, analysis of demand, demand forecasting, market research report, and market appraisal by financial institutions

Part II of the book presents study of specific cases. These include demand study for a dry battery unit, cotton textiles, vanaspati, and steel and demand forecasts for scooters and tractors The case studies selected in this book are designed to provide a proper perspective and clear understanding of the salient features of a market study. In addition, Part II, demonstrates the significance of assumptions and limitations vital for any demand forecasting These cases have been chosen with a view to provide practical illustration of the various aspects of the problem of market study dealt with in part I.

Mr Menon's book is a pioneering venture to provide in one place the essentials of a market study for a new industrial venture The book also contains a select bibliography and three appendices i e. Appendix I — Industrial data for Market Research ; Appendix II — Technical Notes for selected Items ; Appendix III— Reference for Market Intelligence, and Appendix IV gives (a) proforma for industrial Information (b) For Financial Institutions only (c) Organisational Chart for a Market Research Department. These appendices and the bibliography have increased the utility of this small volume for all those who are interested in conducting a fresh market study for a new project or conducting a further probe into this fertile area of demand projection. The book is a must for all those setting up new industrial projects

—**K. Prasad**

Agricultural Economy

The Systems of Landholdings in Haryana—A Co Output Analysis

by Ram Chander, Kurukshetra University, Kurukshet Price Rs. 21.

THE STUDENTS of agricultural economics are too familier with the problem of determining th relationships between the inputs and the output of farm. This small book under review tries to determin these relationships for the agricultural farms in Ha yana It is based on a field survey conducted durin May-December, 1967.

The author notes that the results of his study "co firm what economic theory would indicate, viz., th institutional arrangements under which farms operate— do indeed determine their respective cost and outpu relativities and that it is by conditioning the relativ resourcefulness of farms that the differences in th ownership of land or/and labour, characterizing th institutional arrangements, help determine the cost an output relativities". However, it must be mentione that though the study has yielded several interestin results, the author has not attempted to correlate them Also it would have been better, had the author tried t relate his findings to the prevailing social structure i Haryana. In any case there is little doubt about th usefulness of this work for any student of agricultura economics

—**Rakesh K. Sharm**

Concept Of Development

Dynamics of Development ; An International Perspective (Vols. I and II)

Edited by S. K. Sharma ; Concept Publishing Company, Delhi ; 1978 , *Pages* 616 *and* 716 *respectively Price Rs.* 300.

OVER THE PAST two decades, particularly since the United Nations launched the first Development Decade in 1961, the question of development has been dominating social science thinking. This is as it should be, as the whole world is caught up in the prevailing aspiration for development, especially so the new states in Asia, Africa and Latin America, euphorically called the developing nations. Despite the emergence of enormous literature on it, the problem of development continues to engage the minds of both civic leaders and intellectuals as much today as before if only because of its sheer magnitude and complexity. The volumes under review give ample evidence of it.

Published in honour of Professor J. N. Khosla—a diplomat, administrator and an outstanding scholar—the volumes contain as many as 98 essays of varying shapes and sizes of which 39 are included in Volume I

and the remaining 59 in Volume II. Since the articles deal with topics of wide-ranging interests and the arguments advanced are quite complex and subtle, it would be exceedingly difficult to provide a gist of all what these volumes contain in a brief review. As such, we can do here no more than sketchily highlight some of the common thought currents that run through the various articles.

A general feature of most of the essays is their concern with the concept of development. The over-all conclusion to which this conceptual analysis leads is that development is not to be equated with mere economic growth, that it has equally important collateral dimensions—social, cultural and political, and above all, that human aspects of development need for greater attention than they have so far received. Rich in notional analysis, the essays have little to offer in terms of operational indicators of development.

Many of the essays seek to pose and analyse the issues which constitute the hub of development analysis. These issues pertain to explanation of under-development in terms of rival theories of cultural backwardness and colonial exploitation, the dilema of growth first and justice later, the question of priority between economic and social development, the choice of development goal between higher standard of living or better quality of life, the alternate strategies of 'appropriate' technology and advanced technology, and the problem of incompatibility between planning and development. Surely, some of the essays offer valuable insights into these issues ; not many, however, lead the reader beyond the widely accepted shibboleths of the day. At any rate, Rajni Kothari aptly remarks in the foreward that these Volumes present "some of the issues that the earlier genre of development theory brought up. It is useful to go over these writings for providing a generational overview to the present search for alternative paradigms and perspectives".

The problem of development is multidimensional, and hence easily amenable to multidisciplinary perspectives. Included in these Volumes are essays written by specialists in various social science discipline as also senior administrators, policy makers and U.N. experts from developed and developing countries. However, the volumes are loaded in favour of essays on political development with focus on development administration.

This bias in favour of political context of development is well revealed by the sub-title of the Volumes. Quite in accord with it, serevarl articles deal with the demand for a 'New International Economic Order' and characterise it as a "major revolution" in our time both in its international and domestic effects. On the one hand, this demand is viewed to have a bright side for the developing nations in so far as it nurtures psychologically a sense of emancipation from what is termed economic colonialism ; on the other hand, it is feared to have a dark side also in that the romantic dream that global re-distribution alone will solve their problems might stifle the initiative and efforts of the Third World countries to solve their food, population and ecological problems by domestic discipline, hard work and imagination. Accordingly, the need for redefining the goals and strategies of development is underlined. A realistic note is offered to the developing countries to take to a line of development "better suited to their history, culture and genius as well as to the fast changing international environments". The emphasis on international perspective notwithstanding, there is no dearth of essays on domestic, rural and even tribal development.

Despite the fact that the foregoing is an incomplete map of the Volumes under review there is something for almost everyone interested in the study of development. There is not a poor article in the lot ; nor are all the articles of a uniformly high standard either—they are of uneven quality. So do the essays vary in respect of their relevance to the theme of the volumes : even as many have direct relevance to development some have just remote relevance to it. But these do not diminish the value of the work which is by and large a fruitful endeavour. The editor deserves congratulaitons on getting contributions from eminent social scientists and distinguished specialists in other fields of activity.

—**S. L. Sharma**

Tribal Lands

Land Alienation and Restoration in Tribal Communities in India : *edited by S. N. Dubey and Ratna Murdia, Himalaya Publishing House, Bombay,* 1977, *pp.* 216; *Price Rs.* 35.00.

THE BOOK is result of a National Seminar on the problem of 'Land Alienation and Restoration in Tribal Areas', organised by the Tata Institute of Social Sciences, Bombay during mid-June, 1976. The participants were mostly officials connected with tribal development Programmes from the States of Andhra Pradesh, Bihar, Gujarat, Maharashtra, Madhya Pradesh, Orissa, Rajasthan, and West Bengal, and also from the Government of India.

In all, there are fifteen papers—thirteen on the same theme from the different States and one providing bird's eye view of the country as a whole (the national picture) contributed by S. K. Kaul from the Government of India. The concluding paper is devoted to the Policy and Administrative Issues.

Although the book brings out regional variations with regard to the approach to problem of land alienation, the main issue involved relates to the amendment and enforcement of tenancy laws. Because of a number of loopholes in the tenancy legislation and land policies in different States, slackness in the implementation of restrictive provisions, and due to the complexities of the socio-economic factors, a large portion of tribal lands have passed into the possession (*de facto* or *de jure*) of the non-tribals. Above all, the presence of the institutions of moneylenders, shop-keepers, and similar other agencies in tribal areas and their functional role in the economic life of tribals have been mainly, responsible for alienating lands from the hands of the tribal people and for the bonded labour. The Fifth Five Year Plan's strategies with regard to this, coupled with the amendments affecting the legislation controlling the traditional loading activities of the private moneylenders in tribal areas, and abolition of bonded labour by the enforcement of Central legislation, if implemented effectively and with all stringency, would go a long way in improving the goals of economic development.

The book is a good collection of experiences on the problem of alienation of tribal lands. Although, various contributors have approached the problem differently, the salient features of the legislative measures including the problem of implementation, and the suggestion appear to be pragmatic.

In a contribution of this nature, one expects some References (at the end of each paper), a Bibliography, and an Index at the end. However, it is a useful publication and can provide lot of insight into the nature of the problem, to those who are connected with land alienation and restoration in one form or the other.

—**B. N. Sahay**

A Winner of President's Gold Medal



"I am grateful to the teaching staff in BHEL Hardwar Training and Development Department for the guidance and encouragement because of which I was able to boldly and successfully participate in the all India competition".

IT WAS A RED LETTER day in the life of Sri Rajendra Singh Karki, when he won the President's Gold Medal at the All India skill competition wherein the best in the Turner Trade from all the six Central Training Institutes of the country demonstrated their skills. In fact, for Sri Karki, a turner in the Bharat Heavy Electricals Ltd., Hardwar, winning laurels in different competitions has become a hobby. The 28 years old Karki is one among the five sons and three daughters of a retired Subedar of the Indian Army. Though his forefathers belonged to Nepal, his parents migrated long ago to Raipur, a small village in U.P. He had his schooling in the village and later in Dehradun.

Sri Karki joined BHEL Hardwar as an Apprentice (Turner trade) in 1971 under the Apprentices Act. Throughout his one year training he displayed excellent performance and stood first in the Apprenticeship Final examination. This qualified him to appear at the Regional Skill Competition.

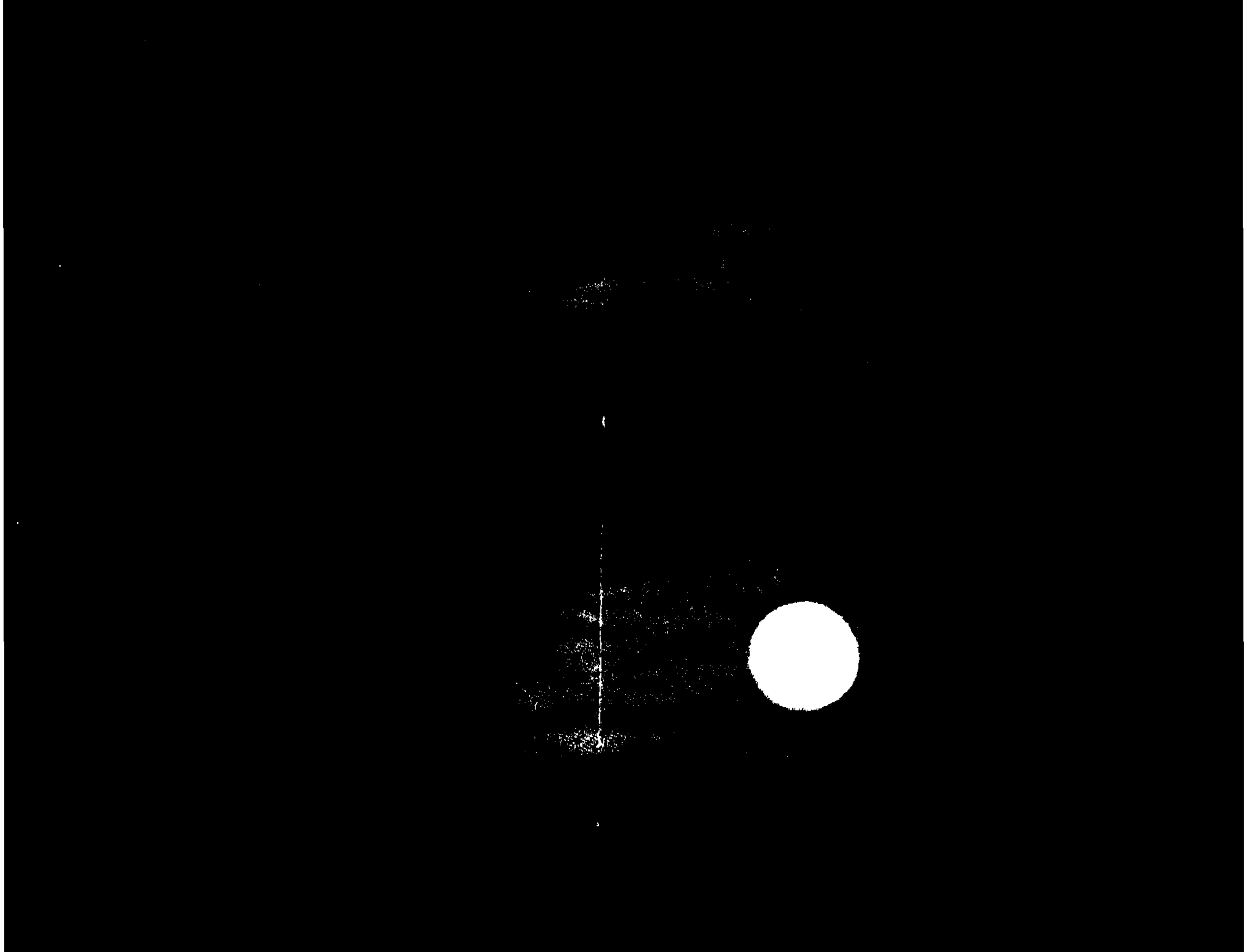
There he proved his mettle and bagged the silver medal. He scored highest marks in all the six eligible trades in the Regional Competition. So BHEL Harwar was given the Best Establishment Award.

Then he participated in the All India Skill Competition, and won the President's Gold Medal. The award also carries a cash prize of Rs. 5,000, a kit box, and a free three week all India tour of various industrial establishments.

Naturally, Sri Kirki is proud of Presidents Gold Medal, and BHEL is proud of him. He says "I am grateful to the teaching staff in BHEL Hardwar Training and Development Department for their guidance and encouragement because of which I was able to boldly and successfully participate in the All India competition". □

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

yojana



MANAGERIAL SKILLS FOR RURAL DEVELOPMENT

PUBLIC DISTRIBUTION SYSTEM

SERVICE TO THE INDIAN FARMERS

Our Achievements

First Indian Built Airport in Libya

THE FIRST Indian built Airport abroad was constructed by the International Airports Authority of India (IAAI) in the desert town of Ghat in South West Libya at a cost of Rs. 430 million. The construction included 3600 metres long main runway, a secondary runway of 15,000 metres, a parallel taxi-track and main apron.

In addition to the completed airfield pavement works, the Authority is also constructing a terminal building for the airport

In the midest desert area, against very heavy odds like acute water scarcity and dust-storm 200 technicians completed the project within the time frame utilising highly sophisticated machinery

Another Rs 220 million airport construction project was given to the Authority in Libya at Brak, north of Sebha, the third largest city in the country The National Building Construction Corporation (NBCC) associates with IAAI's construction in Libya

Apart from the works in Libya, IAAI has a contract of building the Hulule airport at a cost of Rs. 86 million and a consultancy project for the Mafia airport in Tanzania The Authority has at present Rs 1,000 million workload in India and abroad.

Increase in Traffic at International Airports

INDIA'S four International Airpoit at Delhi, Bombay, Calcutta and Madras recorded an increase of 16 per cent in passenger traffic during 1977-78 over the previous year. During this year 86 5 lakhs passengers were handled as compared to 74.7 lakhs during 1976-77. The cargo handled for the year 1977-78 at the four airports was 1.48 lakh tonne registering an increase of 16 per cent over the previous year.

The Airport Authority earned Rs. 9 57 crore in foreign exchange from landing and parking charges from foreign airlines during 1977-78 as compared to Rs. 6.25 crore last year

The capital expenditure of the Authority for the four airports was Rs. 10 42 crore during 1977-78, as compared to Rs. 6 crore during last year. The Airport Authority had invested over Rs. 34 crore on airport works and equipment during the past six years. During the year 1977-78 the Authority generated internal resources worth Rs. 6.24 crore.

The revenue of the Authority increased to Rs. 21.4 crore as against Rs. 13.95 crore in the previous year. It earned a net profit of Rs 2.9 crore as against Rs. 91 lakh last year.

All-Time Record Production of Locomotives

THE DIESEL Locomotive Works (DLW) of t Indian Railways has achieved an all-time rec by turning out 150 engins during 1978-79, better the earlier record of 140 engines. The turn-out 130 complete locomotives during the year is also new record exceeding the earlier record of 120 loc motives

In money terms, the production at the DLW du ing 1978-79 was of the value of Rs. 54.7 crore.

The Diesel Locomotive Works is producing loc motives not only for the Indian Railways, but also f the Steel Plants in the country. The DLW has enou orders to fully utilise its capacity for the next thr years Plans are being drawn up to expand its annu capacity from 150 to 200 engines.

Nomadic Tribe Settles 'Amul Way'

NO LONGER are lambadis of Kolipalya villag near Mysore nomadic now Three members c this wandering tribe formed into a Milk Producer Cooperative Society under the aegis of the Karnatak Dairy Development Corporation. In the beginning the started supplying five litres of milk every day to th Corporation Within a few months the membershi has gone up to 120 and the milk supply has crosse 300 litres.

Kolipalya and nearby villages of Veerenpura an Mukanpalva have a large population of Lambads. Th coming up of the milk society has changed the lif style of some of their families.

This is one of the 750 milk producers societies se up by the Corporation on the pattern of Amul mil producers cooperative societies The society is manag ed by the members and a package of services includ ing marketing is rendered by it to the members. Th dairy corporation buys the milk from the soceity a a fair price The profits earned by the society ar shared as 'bonus' among its members.

Houses for Workers in Public Sector

A SPECIAL housing scheme for workers employed in public sector undertakings, has been promoted by the Housing and Urban Development Corporation (HUDCO)

Under this scheme, public sector undertakings can avail of loan assistance for construction of houses for their employees of all income categories for allotment on Hire Purchase basis. The rate of interest charged by HUDCO varies as per income category of the employees. For low paid workers with monthly income not exceeding Rs. 350 the net rate of interest is as low as 5 per cent with repayment period of 20 years.

HUDCO has recently sanctioned loans of over Rs. 5 crore to help Steel Authority of India (SAIL) and Bharat Heavy Plates and Vessels (BHPV) to construct 2466 houses of various categories for their employees. The houses will be constructed at Rourkela (Orissa) and Vishakapatnam (Andhra Pradesh) and allotted on hire purchase basis to workers of these public sector undertakings.

YOJANA

Volume XXIII Number 10

1 June 1979

11 Jaistha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor ; P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :

AHMEDABAD · Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S. K. Ray
HYDERABAD · B N Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM · Rosscote Krishna Pillai
Cover Design : P. K. Sen Gupta
Photographic Officer · K. S Nagaraj

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 **Telegraphic Address: Yojana**, New Delhi. **Telephones**: 383655 387910, **385481 (extensions 402 and 420) Circulation** : Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs.42. Foreign Subscription : One Year—£ 2.70 or $5.00. Two Years—£ 4.50 or $9.00 Three Years—£ 6.30 or $ 12.50 Single Copy—£0.12 or $ 0.25.

Editorial

Thoughts On Energy Planning

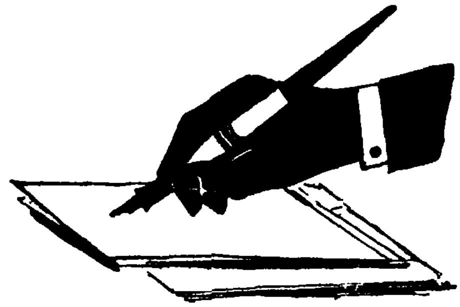
OUR SCIENTISTS did not share the conviction of Dr. Rajendra Prasad, then President of India, when he asked them to manufacture solar cookers. He thought it was eminently suited to tropical conditions with plentiful energy emanating from the sun for nine months in a year. Although he was fortified in his belief by his own cooking experiments with a solar cooker during his prison days, the scientists made a mess of it. Their tailism to the advanced countries of the West who had at that time plenty of oil as the principal form of energy, bred a sense of complacency and they did not take any initiative to evolve an appropriate technology for their developing country. Following the western model they lost no time to switch over their faith from oil technology to nuclear energy.

By a curious irony of fate, the world is now running out of oil. The advanced industrial countries have already started a crash programme for energy transition, which is, however a question of time. The wealth industrial world's energy problems dwindle into insignificance when compared to the crisis facing India. The possibility of our oil reserves going almost dry by the end of this century and the alarming prospect of continuous increase in international oil prices are forcing our planners and administrators to look for other sources of energy to keep the wheels of industry and economy moving. Coal is at best a temporary saviour. Our reserves are estimated to be 1,10,000 million tonnes, capable of meeting our requirements for about 75 years at a modest growth rate of five to six per cent. Water resources, which have not yet been fully exploited so far, cannot be the answer to the energy crisis. Hydel projects are costly, highly capital intensive and require long gestation periods. Even when fully exploited, it can at best contribute an equivalent of 135 million tonnes of coal by the end of this century.

The option naturally narrows down to nuclear power or known sources like solar energy, biogas and other biomass conversion techniques. The original belief that nuclear fission can provide clean, safe and cheap source of power has not stood the test of time. The risk of a reactor shutdown or other accidents and environmental pollution cannot be ruled out even though no major disaster has occurred so far

The best choice appears to be solar energy, which is abundant, non-polluting and potentially cheap. Financial pressures are already pushing us along this way. It does not mean that we are making a choice for an antiquated, un economic and regressive system. The time is not far off when both the industrial and agrarian economies will turn to solar resources for their commercial energy. In countries like USA, many solar technologies already exist to provide energy in the form of heat, liquid or gaseous fuel and electricity. The photovoltaic or solar cell is at present the principal power source of orbiting satellites that carry much of the world's international telecommunication traffic. By early 1977 about 2 million solar water heaters had been sold in Japan. In Israel, Australia and USA these are also being marketed in large number. Through solar thermal power plants solar energy is being harnessed to produce electricity.

For a rural small scale decentralised industry which we consider essential for integrated rural development, solar energy-based small local power stations will be both economic and useful. Time is running out. If our scientists and others concerned make a sincere effort, India may even usher in the solar era before the industrially advanced world does.



Managerial Skills for Rural Development

V. G. Rajadhyaksha,
Member, Planning Commission

A GROWING and efficient corporate sector is a vital input into any national economy. There is no doubt it needs good men who will look ahead for the exciting and challenging opportunity of helping the economic development of this country. This developmental effort will create a new kind of managerial needs.

The Draft Sixth Plan provides new opportunities and presents the perspective of the future. It is perhaps necessary to dispel at this stage the illusion that seems to have been created in the minds of some people, including the business community, that this Plan is merely the result of the Gandhian bias of the present Government and that its rational is essentially ideological rather than economic. It is then argued that the Plan will change if the Government were to change and hence long-term forecasts of any kind based on the present objectives would be unjustified. This is simply not true. It is worth noting that State Governments run by almost every major political party have at no time raised any significant objection to either the objectives or the strategy of the Plan despite the numerous meetings of the National Development Council or its Committees and Working Groups that have been held since the Draft Plan was formulated. No Government or planner today can possibly overlook the massive problems of unemployment and poverty, primary education and illiteracy, basic health care and drinking water, housing and roads and their ominous impact on our population growth and income distribution. Given the resource constraints of a poor country there is no alternative to a strategy which, while minimising the capital output ratio, maximises producti employment opportunities and meets the demand minimum needs. There is no doubt that the mediu and large corporate sector has in the last 25 ye made impressive contributions to creating technologi capability and reducing our reliance on imports. On t other hand, it has made very little impact on reduci unemployment and has absorbed vast amounts of cap tal. While therefore I repeat that the corporate sect must continue to grow, the investment priorities m necessarily undergo a significant shift towards ag culture and allied activities and village and small i dustries.

From the convocation address at the Indian Institute of Management, Ahmedabad.

Our Strategy

Besides resources, our strategy must take caret note of three other constraints to which in the pa we have as a country devoted little attention. These a the limits to our energy resources, the growing thre to the environment and the problems of metropolit congestion. Happily, the rural development progran mes with their emphasis on afforestation, reclamatio ability to use renewable pollution-free energy devic combined with the minimum needs programme sugge a way of dealing with these constraints also.

The only criticism of the Plan which however I d find somewhat difficult to answer with confidence its implementability. To a very large extent the techn cal solutions to the three major problems of rural de velopment, energy and the environment are known within reach. The real doubts arise out of our capa city to apply them effectively. It is the implementatio of the many programmes in these areas that is goin to present the most formidable managerial challeng that the country has ever faced despite the fact tha

financial and material inputs will not be serious constraints. But these challenges must be faced and overcome because this is the bed-rock on which all other economic development can take place. If we fail, I am afraid, the edifice of the entire corporate sector especially organised industry and many other institutions, will be seriously threatened. I would urge therefore that it is as much in the interests of the corporate sector as any one to see that the strategy succeeds.

Problems of Rural development

The problems of rural development, the bulk of the burden of this will fall on the existing district administration supplemented by established organisations like the KVIC, Handlooms and Handicrafts Boards and new bodies like the District Industries Centres which have been devised to bring about a degree of integration into the various specialised agencies, numerous other State level promotional agencies and the rural cooperative and banking infrastructure. Many of these agencies have done excellent work and have produced commendable results but it would be idle to pretend that, taken together, they have anything like the level of managerial expertise necessary to see through programmes of the magnitude and diversity that the rural development plan envisages.

My own view is that there is more than enough talent in the country for us to put through these programmes and an institution like the Indian Institute of Management could set an example as it did some 17 years ago when the major managerial gap was rightly considered to be the scarcity of trained managers for the private and public corporate sector. Today many other institutions, business schools and universities have developed some capabilities in this field. The larger and better managed corporations are running their own management development programmes taking in raw graduates. While it will still be necessary for institutions such as the IIM to continue to set new standards of excellence in the corporate management field, its real challenges to my mind lie elsewhere. One of these is to help overcome the managerial deficiencies in the agencies which are involved in rural development in which I include those in the smaller towns who form the hub of this activity.

It will no doubt be argued with some force that the IIM has trained its graduates with a sharp focus on professionalised corporate management and its ability to contribute to the task of development in the highly disaggregated, unorganised, widely dispersed and illiterate environment of the rural and semi-urban areas will be minimal. In fact it will be said that you will be taking a potential first-rate corporate manager and make him into a complete misfit. There are those who also argue that this activity requires a very different type of human raw material and different training inputs and it would be a mistake to mix these two types

Rational Thinking

I do not share this view. First of all our educational system has taught us is at least to think logically and rationally and to analyse problems in terms of their commercial, financial, technical and above all human content. It is difficult to accept that, given the right attitudes and motivations, many of these disciplines cannot be applied to rural developmental problems. Indeed, there are so many cases today where it has been done with resounding success such as the Kaira Cooperative, the Bhartiya Agro Industries Foundation and a large number of voluntary agencies who have recruited professional managers, that the issue cannot be seriously contested any longer. Your first Director himself has demonstrated by his personal example what can be achieved if the motivation exists. One could argue that the course work in management institutes ought to devote some more attention to the economic, social and technical problems of rural revelopment and would certainly commend this thought for the consideration of your Board. There is however an equally important reason why products of institutions like the IIM should get involved in the problems of our rural areas and that is the growing rural-urban gap not merely in terms of incomes, but in attitudes, language, value systems, and social and religious customs which must be bridged if we are not to have one day a major confrontation. The recent and unprecedently large rally of kisans in Delhi and the landless labourers are not to be dismissed as mere attempts at political lobbying and must be taken as symptomatic of a malaise which needs attention. It is only if the urban intellectual elite typified by the IIMs were to blaze the trail that others will follow. The creation of insitutions specialising in rural development may perhaps be eventually necessary but their ability to keep the communication channels between the corporate sector with its urban bias and the rural areas open and wide would be more limited.

Is there any practicable way in which the talent emerging from such institutions can be involved in rural problems? It would be hopelessly unrealistic to assume that all of you could afford to make the monetary and other sacrifices which such a step means, however idealistic you may be. It will also be some time before we begin to recognise where our major problems as a country lie and adjust our income and other policies to ensure that they allow the best talent to be devoted to solving them. I therefore offer a suggestion for what it is worth.

Managerial Trainees in Rural Programme

Would it not be possible for all these companies which you are joining to ask their managerial trainees to spend the first three years of their service, before they acquire the responsibilities that go with marriage and a family, in one of the blocks or districts of the country, especially one which has been chosen for the integrated rural development programme. They may need a short three-month orientation course which could be organised by the State Government and the Institute on specific subjects such as block and district level planning, organising village and cottage industries, helping to man the District Industries Centres and contributing to the efficient implementation of the minimum needs programmes especially in areas such as health, education, housing and water supply. It is not the functional expertise which by and large is lacking in cases such as the minimum needs programme. It is much more a question of providing a coordinating link and seeing that the organisational, procedural and logistical problems are tackled in a methodical way, that the concerned executive authorities are gently prodded into action and care is taken to see that the benefits reach the specified target group. None of these are simple tasks but they are the kind which an MBA, with their links to people who can collectively influence public opinion are well suited to take on.

Would all this be resented by the existing staff of the Government right upto to assistant collector or collector as an unjustified intrusion into their areas of responsibility? Perhaps if they felt that their jobs or promotional opportunities were at stake they might, but this is not what is proposed. On the contrary, the availability of a group of young men who are basically highly trained but do not wield direct authority is something they should welcome. Much will depend on the humility and tact the individuals bring to bear on their task, especially in terms of avoiding claiming credit and the speed with which they adjust to the village environment. One of the advantages they will have over their colleagues in the regular administration is that they are not beholden in any way to the power structure of the village and the district and their problems of politics, caste and religion are not likely to influence their actions. May I say that this is not mere speculation—I am aware of one or two companies who have tried this experiment and found that it works.

All I can say is if I were the Chairman of a company I would jump at the opportunity. Not merely, I may say, out of purely altruistic motives. I would do so also because I would get back into the company a basically better manager with his ego back into position, with many of his corners rounded, exposed to the realities of India, more mature, tolerant and humble and far readier to accept, by comparison, the life he will come back to if urban amenities is what he values. It would be preferable not to make such an assignment compulsory but let it be known that the so-called fast tract will largely be served for those who volunteer and do well again not as a bribe, but simply because the company will get a better trained man who deserves special consideration.

Perhaps not all will come back. Indeed, I would expect a few truly involved people not to come back, but this would be the least a company could do for what is in fact the long-term salvation of the country. In the longer term however, I find it difficult to see an income distribution pattern, at present so heavily weighted in favour of the less critical urban corp sector, surviving a situation where the deman managerial inputs is going to remain consistently t in favour of the rural sector.

Corporate Sector's Role

The only other thought that I would like to with you is self-employment on which we are re heavily for solving our problems of employment. E preneurship qualities are not evenly dispersed thro out the country. Gujarat happens to be a particu fortunate State. If we are however to achieve n nally the employment and production targets set the small scale sector, it has to be far more widespr Again, we run into the problem of the lack of finan staying power amongst those who are trained and ing to take some risks. Moreover at the risk of b accused of suggesting that the corporate sector sh be seen as a kind of panacea for all our ills, they h also a part to play in this task. The best suited for t task are those who have had perhaps two or th years of operational experience backed by an posure to all the major corporate activities during th probationary period. Is it not possible for compan to give them a couple of years of leave to try and s whether they cannot be set up in their own busin and provide them with the necessary guidance in fo mulating and implementing small projects? Activiti connected with their own business, so that marketi is not a problem, are obvious areas. With the kind financial assistance banks give these days, the capit contribution that the individual has to provide is n so large as to be beyond his capacity. At the momen such entrepreneural stimulus is confined to famil owned companies helping their sons and relatives set up ancillaries and this slightly incenstuous busine activity has rightly come in for criticism. If howev it gets expanded to true professional managers in th corporate sector, it would be providing a much neede stimulus to the achievement of the self-employmen targets. □

Worker Turns Owner

D. Som

F. P. O. Portblair.

SRI S. C. ARUNACHALAM of Nayashar village of South Andaman block, engaged himself in all sorts of small jobs. During the Japanese occupation he was employed as an agricultural labourer and later as a plantation worker. He was in Government service for a long time. Whatever line he took to, he was not able to make his both ends meet.

Finally he decided to stand on his own legs. He resigned the Government job and took to agriculture by acquiring six hectares of land. To his rescue came a local bank which tendered a loan assistance of Rs. 13,000 under a scheme of total outlay of Rs. 25,000. In two hectares he started growing vine archard, vegetables, pineapple, arecanut and cocoanut. The rest of the land, being hilly could not be utlised. In addition, Malaysian variety of pan leaves which were in great demand in the area, were grown in a portion of the cultivable land. About 150 metre long pipeline fetches water to irrigate the land.

Soon his efforts have started paying him rich dividends. The fruits, vegetables and the pan leaves have gained popularity both in the local and the Madras market. Now his annual income is about Rs. 40,000. Not only that, Sri Arunachalam, once a labourer earning a few chips, has now employed about 15 workers on his farm. Encouraged by the success, and equipped with finances, he now proposes to cultivate rubber and spices in the hilly land most of which still remains unutilised. □



Brahmakumar Bhatt

Chairman Indian Farmers Fertiliser Cooperative Limited

THE INDIAN FARMERS Fertiliser Cooperative Limited (IFFCO) is the Federation of more than 26,000 farmer-cooperatives from village to the national level, spread over sixteen States and three Union Territories. It is the single largest fertiliser producer in the country and biggest cooperative of Asia with an authorised capital of Rs. 200 crore. Indian cooperatives had been distributing above 60 per cent of the total fertiliser consumed in the country for serveral years. Yet, till the birth of IFFCO, they did not own any production units of their own. In a competitive situation, with parallel channels of distribution, cooperatives suffered from lack of supplies to match the requirements of agricultural seasons. This caused disruption to the system. Access to sources of production, of which cooperatives themselves were the owners, could alone ease the problems of distribution. The Indian Farmers Fertiliser Cooperative was born to meet this felt need of the farming community.

Share Holding

The membership of IFFCO consists of Agricultural Cooperative Societies at all levels, namely, National Federations, State Apex Institutions, District Societies and Village Cooperatives. The State Cooperative Banks have also contributed to the Society's share capital. It is a tribute to the Indian farmers that through their cooperative structure in ten States they contributed more than Rs. 10 crore to the share capital of IFFCO for the plants at Kalol and Kandla. The Government of India has also contributed Rs. 18 crore (Redeemable) towards the equity capital of the Society. The cooperative share holding of the society has come from ten participating States, namely, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan, Punjab, Uttar Pradesh, Karnataka, Tamil Nadu and Andhra Pradesh. For IFFCO's third fertiliser plant, being set up at Phulpur (U.P.) cooperatives are expected to raise additional equity capital of about Rs. 250 million. States of Bihar, West Bengal, Orissa, Himachal Pradesh, Jammu & Kashmir and Kerala, which did not participate in the capital of the Society earlier, have also joined in the common endeavour this time. The paid up share capital of the Society has risen from Rs. 5.5 lakh in 1968 to Rs. 760 crore at the end of December, 1977. The contribution of farmers cooperatives—about Rs. 270 crore—is gradually and steadily increasing which reflects the faith of farming community in IFFCO.

The total capital cost of the Society's Plants at Kalol and Kandla as completed, has come to about Rs. 97.6 crore that of Phulpur Plant is estimated at Rs. 171.75 crore. To meet the capital cost, IFFCO raised funds in the form of share capital and loans from Indian and Foreign sources which included Indian Co-operatives, Government of India, Industrial Development Bank of India, Life Insurance Corporation of India, Industrial Finance Corporation of India, Unit Trust of India, U.S. A.I.D., Dutch and U.K. Government etc.

Kalol Plant

The Kalol Fertiliser Project is located near Ahmedabad. An important characteristic of the site is that it is in the Centre of the Kalol Oil and Gas fields and the project is based on Natural Gas.

The 910 tonnes per day Ammonia Plant, designed and constructed with the cooperation of U S.A. is the first of its kind in India and is based on latest technology on account of which the electricity consumption has been cut to the barest minimum when compared to other fertiliser factories of equivalent capacity. This plant has produced about 7.59 lakh tonnes of Ammonia upto June, 1978. The plant has been working at 90 per cent of its licensed capacity. The capacity of Ammonia Plant is proposed to be increased by providing some balancing equipment at an estimated cost of Rs. 9 25 crore with the help of the World Bank.

The Urea Plant of 1,200 tonnes capacity per day, was constructed in collaboration with the U.K. It utilises the latest Stamicarbon Stripping Process technology, which has many operational advantages, and is presently the most widely accepted process in the world for urea production. The total urea production upto June 1978 had been of the order of 9,14,514 tonnes.

Kandla Plant

The NPK plant located at Kandla, has a capacity of 1,200 to 1,800 tonnes/day of NP/NPK fertilisers, depending on the grade being manufactured. Raw materials used are Ammonia, Phosphoric Acid, Mono-Ammonium Phosphate and Muriate of Potash. The last three items are imported raw materials and this largely explains for the location of this plant at Kandla Port. The location is eminently suited for the eventual manufacture within the country itself of Phosphoric Acid which is presently imported. Detailed plans have already been drawn up for the purpose.

The plant is manufacturing two grades 12:32·16 and 10·26:26. The production at this plant has sharply increased from 60,000 tonnes in 1974-75 to 5,17,000 tonnes in 1977-78. Utilisation capacity of the plant exceeds its licensed capacity and now it is working at the rate of 140 per cent. It is proposed to double the production capacity of this plant at an estimated cost of Rs. 23 crore which will be met from the Society's own resources After the expansion Kandla Unit will be one of the largest phosphatic plant in the world

Ice-plant

To utilise the surplus Carbon-dioxide, a Dry Ice Plant was also installed at Kalol, which went into production in March, 1978. The dry ice produced at this plant has been well accepted by the Food Processing Industry and efforts are being made to stimulate the demand for this convenient refrigerant and is planned to produce 1,000 tonnes of Dry ice during 1978-79.

Landmark

A significant and memorable event of the year 1977-78 was that in April, 1978 IFFCO's NPK Plant crossed one million tonnes of production. This performance was repeated by Kalol Plant by crossing one million tonne production of Urea during September 1978. During the year ending June 30, 1978, the Society emerged as the largest single producer of fertiliser in the country. While the production in terms of nitrogen was about 10 per cent of the national production, the phosphate production by the Society accounted for 23 per cent.

The net profit earned by the Society during the year 1977-78 was Rs. 36.620 crore as against Rs. 24.5[illegible] crore during the preceding year. Such remarkable achievements are rare in the fertiliser industry and IFFCO's prestige has gone up considerably for such splendid performance.

Marketing

The main objectives of IFFCO's Marketing Programmes are : (i) to organise an efficient and effective system of distribution for IFFCO fertilisers, (ii) to promote brand-identity of IFFCO fertilisers among cultivators, (iii) to supply quality fertilisers to cultivators (iv) to develop a farmer-education programme designed to improve agricultural practices, (v) to help the 'Cooperative Distribution System' to develop on sound lines, (vi) to train sales-point personnel in salesmanship, service, and sound management practices (vii) to provide Management and Consultancy Services to the Cooperative System.

As a result of aggressive sales policy coupled with effective promotional and educational services being undertaken by IFFCO, the sales have been rising according to the availability from plants and were of an order of Rs. 146.570 crore in 1977-78.

Extension Services

IFFCO has about 300 highly-trained and extention programme through field demonstrations field days, farmers' meetings, adoption of village for integrated rural development, participation in exhibitions and fairs and publication participation in exhibitions and fairs and publication of promotional literature. To make a complete package of inputs and information on the various practices aivailable under one roof, IFFCO has undertaken a programme opening of a number of Farmers Service Centres Forty-three such centres have already been opened. The Society has also a programme on hand to set up a Farmers' Training Institute at the site of its fertiliser factor at Phulpur. At this training centre the farmers will be drawn from different states and will be taught by practical involvement the modern methods of crop production, dairy, poultry farming and fishery. A dry land demonstration farm is also planned in the arid zone of Kutch and the Gujarat Government has already allotted a suitable piece of dry land to the Society for this purpose. In the village adoption programme, besides working on extension technique, an all round socio-economic development of the area is sought. IFFCO has, so far, adopted 210 villages. These villages have the focus of IFFCO's attention of effectively bringing about positive emancipation of the rural masses.

Role of Cooperatives in Dairy Development

B. S. Vishwanathan,
President,
National Cooperative Union of India

LIKE MANY other sectors of national economy, dairy also presents a paradoxical situation. It is reported that India has the largest population of milch cattle. But most of the Indian people are not in a position to get sufficient milk, which is so vital for the health of their off-springs. We are unfortunately a country where per capita milk consumption is the lowest. The dearth of milk is further aggrevated by the manipulations of unscrupulous traders. The milk vended by private people is adulterated almost without exception in various ways. In order to escape from the hands of the law and the testing machines adultration of milk is now reported to be done with certain injurious components, what to speak of adding water irrespective of its purity This position accompanied with the exploitation of the milk producers by the middleman creates a peculiar situation in the country for the dairy industry.

These apart, we find that availability of good quality cattle, good cattle feed, vaterinary services, processing and marketing infra-structure is very weak. It cannot be denied that without a minimum amount of per capita consumption of pure milk, the growth of the future generation will be badly hampered. It is equally true that the economy of the milk producers cannot be dragged out of the morass of vicious activities of middleman unless they are provided with a scheme to give them an economic price for milk produced. This scheme should also ensure that the milk procured from the producers is not adulterated and proper facilities of transportation, processing, marketing, storage etc. are provided to the milk. It is necessary that consumers also get good quality of unadulterated milk and milk products at reasonable price. After looking at various alternatives available including *nationalisation of milk industry*, one finds that within the frame work of democracy to which our country is wedded the only alternative is to create economic democracy for the producers of milk. Cooperatives are the only institutions which can provide the required infrastructure to the producers who will have a definite say in the management of their own cooperatives and the supply of quality milk and milk products at reasonable rates to the consumers.

Integrated Development for the milk production

The production of milk in the country is much less than its demand and this gap is bound to increase further over a period of time due to continuous increase in population. On the other hand the production of milk in the country has increased at a much slower pace. It has risen from 20 million tonnes during 1966-67 to the present level of 24 million tonnes. As a consequence, the per capita availablity of milk has gone down to around 110 gms. per head per day from 140 grams of milk during 1956-61. The problem assumes enormous size if viewed against the requirement of 210 grams of milk per head per day as recommended by the Nutrition Expert Group of the Indian Council of Medical Research. To get out of this situation, it is absolutely necessary to accelerate the pace of milk production, which evidently can be brought about by enhancing the value of production of milk per animal as well as productive animal population.

The enhancement of milk production is inevitably linked with the issue of scientific breeding, feeding and management of cattle; establishment, expansion and modernisation of milk processing facilities to cope with the consequent increase in milk production; establishment of additional chilling centres and milk plants, cattle feed factories etc. Above all remunerative payment of price to the milk producers is to be ensured. The dairy activity undertaken in the integrated form particularly by the small and marginal farmers can provide them a cover against the vagaries of the nature and also enable them to generate recurring income which shall augment their repaying capacity and in its timeliness

Dairy cooperatives have a long history in the country. It starts from the year 1913 when the first diary cooperative was organised at Allahabad in U.P. But the growth of the dairy cooperatives has not been even and steady throughout the country. It was only in the 1950's that Tamil Nadu, Gujarat, and U.P. had made some headway in organising dairy cooperatives. Otherwise no organised attempts had been made for development of dairy cooperatives before the advent of Five Year Plan era. It was during the Plan Period that the importance of dairy cooperatives, being an institutional framework to provide supplementary incomes to the farmers particularly those belonging to weaker sections of the community, was recognised; and emphasis was laid on development of dairy cooperatives. Inspite of this realisation much progress could not be made and no sizeable expansion of dairy cooperative activity took place. 'Amul' the most prestigious venture in the cooperative sector particularly in the field of dairy industry did provide incentive in formation of milk producers cooperatives in Gujarat and other States also. These milk producers cooperatives are playing an important role in raising milk production as well as economic status of their members. There are at present about 20,000 functioning primary milk societies with a membership of 20 lakhs in the country. Their total sales are estimated to be of an order Rs. 175 crore. State level federations of dairy cooperatives have already been formed in five State and a Federation at the national level has also come into existence.

The progress in the co-operative activity has however so far touched only a fringe of the problem. It has yet to make a dent. This is largely because of the immense size of milch cattle and millions of milk producers that are either outside the fold of cooperative activity or are not participating actively. No doubt much more needs to be done in this regard, for which sustained efforts at all levels are required to be made.

There are at present about 20,000 functioning primary societies with a membersihp of 20 lakh in the country. Their total sales are estimated to be of an order Rs. 175 crore.

Solution

The Working Group appointed by the Government of India in 1962 to study the prospects of development of dairying, animal husbandry, stressed the important role of cooperatives in dairy development programmes. The project, "Operation Flood" has also laid emphasis on setting up of rural milk producers cooperative organisations to procure, process and market milk on the one hand and to cater technical inputs for milk production on the other. Keeping the integrated character of dairy development and the need for an infrastructure for providing alround assistance in its entire gambit, the importance of the cooperatives as the only instituion for upliftment of this weaker section of the community, has further increased.

In addition to SFDA and MFAL which hav cial task of providing incentives to the lending for greater coverage of weaker sections, the c tive credit structure has made arrangements fo sion of medium-term loans to weaker sections community for purchase of milch cattle. N Cooperative Development Corporation of late, h started playing a very significant part in the d ment of dairy industry through cooperatives. T tional Cooperative Development Corporation has ed the schemes for financing dairy cooperatives f purpose of organisation of medium and small dairy processing plants and milk chilling centr addition it has also been providing technical assi to the cooperatives for undertaking techno-eco feasibility survey. The State Governments too improved their veterinary services in the rural which are mostly available through the agency o operatives.

The National Cooperative Development Corpora have devised the schemes for financing dairy coop tives for the purpose of organisation of medium small sized dairy processing plants and milk dril centres.

Efficiency of any organisation, particularly of cooperaive organisation depends upon the enlighte ment of its members and operational efficiency of employees. Education and training are essential gradients of any business activity more so of coope tive activity which has social content also in additi to economic object. A sound infrastructure for i parting education to the members of cooperatives a training to their employees is available. This or needs to be taken advantage of by the dairy cooper tives through formulation of specific proposals for t training of managerial personnel and education members.

The views expressed in National Conference o Dairy Cooperatives held at Jaipur in November, 197 have further strengthened the conviction in the capaci and the potentiality of the cooperative structure delivering the goods and realising the desired objective of dairy development. It is heartening to note th the Government of Haryana has been quick to reco nise the utility of this solution and is planning to tak up integrated milk production programme on a massiv scale. It is reported that the Indian Dairy Corporatio and the Dairy Development Board have allocated func for dairy development in Haryana on cooperative line It is a matter of time only when other State Gov ernments also will realise the significance of th cooperative structure for implementing programme of dairy development in their States. □

Indian Engineers Build a Refinery

Raman Patel
Senior Correspondent,
"Yojana", Ahmedabad

SALUTE TO THE technical skill and talent of Indian Engineers and technicians, for they have been able to complete the construction of a 3 million tonne-capacity refinery from A to Z—working, drawings, detailed engineering, fabrication and procurement of equipments and construction including. This achievement is related to the expansion project, estimated to cost Rs. 55 crore of the present 4.2 million tonne capacity Gujarat Refinery near Koyali, District Baroda. The units was commissioned in October 1978

Notable Achievement

The story of talent, skill, sense of devotion and hard work put in by our engineers and technicians, is quite interesting. The original proposal was to construct a refinery, only with a 2 million tonne capacity at an estimated budget of Rs. 30 crore Before the construction of the Gujarat Refinery was taken on hand, Indian engineers and technicians had some practical experience from the construction of refineries at Gauhati and Barauni. Gainfully utilising their experience of the construction of these two refineries they prepared some of the working, drawings and also procured some of the equipments from within the country, thus effecting a saving of more than Rs. 4 crore. The refinery was commissioned in 1965.

Feather in the Cap

In the meantime crude oil was struck in North Gujarat and the need to increase the refining capacity of the Gujarat Refinery was keenly felt. It was decided quite appropriately, to add another one million tonne refining capacity and this task was accomplished mostly from the savings made during the construction of the Gujarat Refinery, in 1967. Further experience gained during the working of the refinery inspired our engineers to effect some changes and modifications at marginal cost. They were carried out successfully, with the result the capacity of the refinery was raised from 3 million tonnes to 4 3 million tonnes. Now, by completing the task of constructing a 3 million tonne capacity unit, they have added one more feather in their cap because this means construction of a refinery, 3 million tonne in size all on their own.

A notable feature of the Gujarat Refinery Expansion project is that unlike the original Gujarat Refinery, it is a compact and well integrated unit, along with seven other processing units. In the Gujarat Refinery, there are three distillation columns, each with one million tonne capacity. Against this, in the expansion project, there is only one distillation column with three million tonne distilling capacity. All these units are operated from a single Control Room. This ingenuity in designing has saved the construction cost of a large number of storage tanks and laying of long pipe lines of various sizes. The processing units, integrated with the expansion project are given below.

Name of the Unit	Unit/Capacity in million Tonnes Per Year
Visbreaker	1.00
Vaccum	0.80
Bitumen	0.25
Naptha Merox	0.10
Kerosene Merox	0.60
L.P.G. Gaustic Wash	0.05
Naptha Caustic Wash	0.60

Another notable feature of the project is the construction of four huge storage tanks—so far the largest built in Gujarat. With 56 metre diametre and 14-4 metres height, each has a capacity of 30,000 KL. About 850/900 tonnes of steel has been used in the construction of each tank costing Rs. 50 lakh each.

Indigenous Know-how

The engineering process for the Expansion Project has been primarily done from the indigenous know-how, except for two small areas where the processes were protected by foreign patent rights and had therefore, to be imported. This constituted only a small fraction of foreign exchange outgo. Almost all the equipment, used in the project, are indigenous. Only

1 DPD/79 1

some raw materials such as carbon steel, alloyed Steel, and some special types of pipes and tubings, *not available in the country, were imported, at the cost of about Rs. 6 crore, which is just about 10 per cent of the total construction cost.*

Pipelines

The design of the Expansion Project is based on 50 : 50 mix Rumaila (Iraq) and Light Arabina Crude. The crude available from Bombay High field *is also processed in this unit. The crude from the*

Some Salient Features of the Expansion Project.

Pipeline length of various sizes	**150 Kms.**
Cable Used	**170 Kms.**
Additional Railway Lines	**10 Kms.**
Railway Wagon filling capacity	**650 Wagon per day.**
Additional Employment	**300**

Middle East areas and Bombay High Oil field, taken to Salaya, the oil port on the gulf of Kutch and from there, to project site through a pipeline. Large size tankers have been ordered by the Shipping Corporation of India, to bring the Middle East and Bombay High crude to Salaya. In keeping with the modern trend of oil transport logistics and economy, single buoy moorings are connected to the Salaya shore installations by submarine pipelines. Crude oil is pumped from the shore installations, through a 28-inch pipeline which is common for the Mathura Refinery as well as Gujarat Refinery upto Viramgam. From Viramgam to the Gujarat Refinery, there is a 45 cms. pipeline with all necessary intermediate repeater stations, communications systems etc , complete in all respects.

F.C.C. Plant

The Refinery authorities are planning to take on hand the construction of another plant called the Fluid Catalytic Cracking Unit (FCC) at an estimated cost **of Rs. 40 crore. This project of great** econo rest to farmers, small industrial units and hc is likely to be completed in 1980-81. The process for this FCC unit has been purchas *the United States, but all the designing and drawings, detailed engineering works, fabricat procurement of equipment, construction and c* sioning of the unit will be done by Engineer Limited, another Public Sector Undertaking.

The need for this project arises out of the fa the imported as well as the Bombay High is of "SHS" (Low Sulphur, Heavy Stock) type process upgrades SHS into (i) Naptha (ii) L (Light Diesel Oil) (iii) HSD (High Speed Diesel (iv) LPG (liquid Petroleum Gas) popularly kn as cooking gas, and will result in considerable am of fuel exchange savings

The LDO is in great demand particularly f farmers in Punjab, Haryana and Gujarat who for t engines, pumps and tractors use at present HSD wl is costlier. The economic benefit from the low cos LDO will flow to the farmers and small and mi group industrial units.

At present the production of LPG in the Guj Refinery is to the tune of 95,000 tonnes per ann With the commissioning of the proposed plant, production of LPG would go up to 2.20 lakh tor annually. This will ease the supply position of cook gas so much that the house-wives will get their cylir of cooking gas, at asking.

Gujarat State Small Savings Investments up

Gujarat secured an investment of Rs. 33.07 crore in small savings against its target of Rs. 25 crore for the year 1978-79. It is due to the exclusive performance of twelve districts in the state.

Among them Ahmedabad tops the list by mobilising, an investment of Rs. 6.16 crore, whereas Baroda cured Rs. 5.85 crore. The other districts in the are, Surat Rs. 4.35 crore; Kutch Rs. 4.23 crore; Bu Rs. 3.23 crore; Rajkot Rs. 1.78 crore; Broach Rs. 1 crore; Surendranagar Rs. 92.54 lakh; Gandhina Rs. 36.82 lakh; and Dangs Rs. 5.83 lakh.

Communication and Rural Development

P. R. Dubhashi

Additional Secretary to the Govt. of India, Department of Personnel & A.R.

DEVELOPMENT is above all a human process and not just a mechanical or technological change. Development does not mean the construction of physical structures however imposing, installation of machines however complicated or adoption of latest technology however sophisticated. In the ultimate analysis, it is the develoment of people. Indeed, structures, machines and technology would not serve their purpose if the human beings are underdeveloped and hence are handicapped in utilising these as means of development.

Development of the people implies generating in them of the awareness of their surroundings, understanding of their problems, identification by them of opportunities available for a better life, a capacity to work out what needs to be done and formulate programmes to solve problems and fulfil their needs, goals and aspirations. If development of the people has to be accomplished in the manner indicated above, what is required is education of an entire people for a better living. This is considered of paramount importance not only in so-called developing countries but also in the developed countries.

Communication in Rural Development

Now where is the need for this is more imperative than in the field of rural development. That is why when the programme of community development was initiated in 1953, high priority was given to social education amongst men, women and youth and to extension as a basis of community action in the field of not only agriculture but all other aspects of rural life. Taking into account the importance of agricultural extension and social education, all development workers in the community development blocks including village level extension officers were educated in the techniques of extension and community work. Extension was a part of the two years course for village level workers, as well as shorter duration courses for other extension officers. Extension education institutions and social education training centres were specially established for the purpose. The underlying idea was that development programmes must go hand-in-hand with community education if the development office had an Information Centre where through charts, models and graphs the rural people visting the Block Office were educated in new techniques and ways of living

In more recent years in the field of rural development more emphasis has come to be placed on the hardware of physical programmes and financial expenditure as compared with social education. Indeed, in many States it was felt that the programme of social education and the social education workers are redundant and could as well be done away with. Viewed in a long-term perspective, this must be considered to be retrograde step.

When the first flush of the enthusiasm for social education was over after about a decade of community development in the country, we seem to return to it in the form of radio and television. Radio Rural Forum or Charcha Mandals were established in rural areas to listen to the special rural broadcasts started at all the stations of the All India Radio throughout the country. It was expected that through these broadcasts new techniques and programmes would be communicated to the rural people and their discussions on the same would be fed back to the stations for further clarifications or elucidations. The Radio Rural Forum evoked some enthusiasm for a while, but it seem to have died out in recent years.

An outstanding experiment in the use of television as a medium of mass communication was attempted through the Instructional Television Experiment. It was an innovation of great significance for India's countryside. However, after the withdrawal of Satellite facility by the USA, the programme has come to an end. The rural TV sets are idle and their antenae are not lifting any programmes and have to await till we are able to set up our own Satellite. An evaluation of this experiment has been carried out and would be of use when the programme is renewed.

Integrated Rural Development

Integrated rural development implies development of all sectors of the rural economy and all sections of the rural society.

The rationale of development of all sectors of the rural economy is that they are inextricably interlinked with each other. Thus, agriculture is linked with allied activities like dairy, poultry, fishery and piggery, sericulture, sheep-farming, forestry etc. and with rural industry. Agriculture itself covers a vast field and has various aspects. Development of irrigation, rural electrification, plant protection, distribution of improved seeds, fertilizers and pesticides, agricultural extension, agricultural credit and investment, agricultural storage, marketing and processing, transport for movement of agricultural commodities, health, education and sanitation in rural areas, are so many aspects which are inter-linked with each other. Integrated rural development connotes suitable programmes in all these fields.

The rationale for development covering all sections of the rural society is that if modernisation of agriculture and increasing agricultural productivity and prosperity is confined to the larger land-holders, then small and marginal farmers and agricultural labourers will not be the beneficiaries of the green revolution and would provide a potential for a red revolution. It would lead to social tension and conflict. That is why special programmes like small farmers development agency (SFDA), marginal farmers and agricultural labour agencies (MFAL), drought-prone areas programmes (DPAP), rural works programme (RWP) and Antodaya programmes have been designed to deal with the less privileged sections of the rural society

Need for Comprehensive Programme

A comprehensive programme of rural communication is required to deal with rural programmes covering all sectors of the rural economy and all sections of the rural society. The content, means, methods techniques and agencies of such rural communication programmes need to be discussed.

The rural development programmes in India have been going on since 1952 when the National Extension Service and Community Development pro-

grammes were initiated. They were followed by various specialised programmes of rural development like I.A.D.P., DPAP, SFDA, MFAL, IRD, etc. For reaching these programmes to the remotest corners of this vast country, a number of techniques were employed with different degrees of success. They could be listed as followed :—

(1) Visits to villages, organisation of demonstrations on farms, village meetings and seminars.

(2) Distribution of publicity material like posters and leaflets.

(3) Use of mass media of communication like film, radio and television; special mention may be made of the radio rural forum as also Instructional Television Experiment.

(4) Training programmes for farmers and rural leaders including village women and youth at the training centres.

(5) Exhibitions in the villages, at rural training institutions and agricultural universities.

(6) Mobilisation of rural institutions like Mahila Mandals, Yuvak Mandals, Cooperative Institutions and Panchayati Raj Institutions.

These different methods and techniques of rural communication can be employed singly or together. Thus, at the village meetings, demonstration, posters and exhibitions could be organised. Leaflets can be used as training material at the training courses given by the training institutions. The youth organisation can provide radio rural forum or a listening group.

The techniques also may be used in a sequence of communication. Thus, a village meeting or a demonstration could be used to pick up potential leaders. They can then be brought together for a training programme and then may be followed up in the villages through village visits, counselling and organisation of radio listening groups or television viewers groups.

Agents of communication

In the beginning, the communication with the rural people has to be made by the village workers. They may be either multi-purpose workers or single purpose workers like the agricultural demonstrators or the health or family planning workers. They have to be supported and supervised by the supervisory personnel at the Block and District level. The effectiveness and impact of communication, however, depends ultimately on the quality of the field or village personnel. They are the agents of change and hence also the agents of communication. They have, therefore, to be trained in the art and techniques of communication. The extension training in the country has been mainly organised with a view to impart skills in communication.

It has to be remembered that the radio, television or the printed word may reach the better-off farmers but not the small farmers, marginal farmers and agricultural labourers. Programmes of the SFDA, MFAL, IDP or Works Programme have to reach the illiterate people and people without access to the mass media. Financial institutions like commercial banks and regional rural banks have introduced special as[...] for these havenots under the Differential Interes[...] me. If these new programmes have to reach th[...] nots, reliance cannot simply be placed on the [...] television or distribution of printed literature. [...] visits and even door-to-door visits are required [...] rural workers. Hence the importance of int[...] work in rural areas by the field workers; mass [...] of communication or libraries are still not a sub[...] for intensive rural development work in the devel[...] countries.

Thus while opportunities of communication thr[...] radio and television would have to be exploited t[...] maximum in the years to come, the more tradit[...] media of communication should not be given up.

Communication and Rural Development

For communication to be effective, whether thro[...] radio television or otherwise, the communicator m[...] work hand-in-hand with the development worker. [...] development worker knows what needs to be comm[...]nicated, but perhaps not how. The technology a[...] programmes to be communicated form part of wh[...] is called the stock in trade of the development wor[...] What is, therefore, required is a communication be[...]ween the communicator and the development work[...] before both could be effective. The communicat[...] must look upon himself not as an independent enti[...] but a member of the team of development workers.

Development is a micro-process whereas mass med[...] of communication involve certain amount of central[...]sation. What is required, therefore, is decentralisatio[...] and localisation of the media of mass communicatio[...] whether radio or television or press. So varied ar[...] the socio-economic and agro-climatic conditions tha[...] centrally conceived and designed programmes ar[...] bound to be irrelevant unless they are completely transformed to meet the local situation.

We have to look upon communication policy as a[...] integral part of the development policy. For every development programme there has to be a communication component. It is only when communication and development come near to each other then both have a chance of success. □

The effectiveness and impact of communication, however, depends ultimately on the quality of the field or village personnel. They are the agents of change and hence also the agents of communication.

Creating Mother and Child Institutions

Dr. S. M. Shah
Jt. Secretary
Programme Evaluation Organisation, Planning Commission

THE INTEGRATED CHILD Development Services (ICDS) programme was introduced in the Fifth Five Year Plan to make a concerted and coordinated effort to deliver a basic minimum package of health, nutrition and educational services in an integrated manner to the vulnerable mother (expectant and nursing) and the young child (0—5 plus years). In the Draft Plan 1978-83 the programme is stepped up so as to cover a much larger area and in particular the tribal groups of populations whose nutritional levels are proverbially low.

The pivot of the programme is the anganwadi, meaning a court-yard of a house where children and mothers assemble to receive supplementary nutrition and non-formal education. Anganwadis thus form the basic institutions for mother and child. These are the focal points of nutrition care and may be seen as 'growth centres', that is, the designated places which radiate their influences to the dependent populations in the hinterland villages around.

Thirtythree experimental ICDC projects were started in India in 1975-76 and continued in 1978-79. Of these, 12 were located in tribal areas and 14 in other rural areas. Four projects were located in groups of slums in Bombay, Delhi, Madras and Calcutta. Slums are known to prevail in almost all the nine Metropolitan areas in the country. May be, there is need to cover the remaining five cities, where more than 25 per cent of populations live in slums and hutments

Programme Objectives

The main objectives of the Integrated Child Development Services programmes are .

(i) To improve the nutritional and health status of children in the age group 0 to 6 years ;

(ii) To lay foundations for the proper psychological, physical and social development of the child ;

(iii) To reduce the incidence of mortality, morbidity, malnutrition and school drop-out ;

(iv) To achieve effectively coordination of policy and implementation among the various departments to promote child development ; and

(v) To enhance the capability of the mothers to look after the normal health and nutrition needs of the child through proper nutrition and health education.

In sum, the programme seeks to create mother and child institutions for the delivery of a package of services. It seeks to lay foundations of such institutions which can be repleted in other parts of the country. In conception it is similar to IADP (Intensive Agricultural District Programme) which was introduced in the country a decade ago to increase food production or development of agriculture based on a 'package of services' of seed-fertilizer-irrigation inputs. Under the ICDS, the package of services are the health inputs-immunisation, supplementary nutrition, food and medicines, iron and folic acid and non-formal education aimed at the development of the child. It is basically an experiment to develop human resources and concentrates on 'mother and child' for creating happy homes. The beneficiaries are children of 6 months to 6 years age group and expectant and nursing mothers. The success of the programme depends upon whether it has reached the target population in specified manner and whether local institutions have been created to continue the activity as their programme. By September 1978, supplementary nutrition benefits were received by 218789 children 5 months to 6 years of age, and 46103 expectant and nursing mothers. Non-formal education was given to 107571 children and 43164 women attended functional literacy classes. In the ultimate end, the programme should be run by local agencies, the panchayats, Mahila Mandals and District Project Level Committees.

Progress in Implementation

On the whole, the stage has been well set in terms of equipping the centres with necessary health and non-health personnel required to assist the programme. As per reports flowing in, by September 1978, 28 out of 33 Medical Officers and 48 out of 62 Lady Health Visitors and 208 out of 228 Auxiliary Nurse Midwives were in position to man the 33 ICDS Projects. In 32 out of 33 Projects, Child Development Project Officers were appointed. Each project area has a number of anganwadis established at village level. Of the 3285 anganwadi workers sanctioned, 3247 were in position, 140 out of 159 Mukhya-sevikas were at work. On the whole, 87.9 per cent of additional health staff and 98.3 per cent of the non-health staff was in position in September, 1978. Allowing for the transitory staff, the position may be deemed to be satisfactory.

It is essential that the health staff trained in medical colleges in cities are given an exposure to the needs and style of working in the rural, tribal and slum areas. Training, hence, is part and parcel of the reorientation required to bring to bear the necessary dedication and zeal to further the programme objectives. All the staff, including the anganwadi workers and mukhya-sevikas were given training. They are similar to people on the lowest rung of the ladder nearer to the grass roots but at the same time need to be oriented to looking after children of various age groups, attract the beneficiaries to the anganwadis and sustain their interest throughout the year. Of the 3247 anganwadi workers, 2915 were already imparted training. Of the 140 mukhya-sevikas, 123 were trained. Besides, the additional health staff and the regular PHC staff were given training. As many as 73 Medical Officers, 81 lady health visitors and 338 auxiliary nurse midwives were trained. Paradoxically, more non-health than health personnel received training. Training of the re-

3 DPD/79—4

mainder of health staff, needs to be stepped up for 'bunching effect'.

Twentytwo primary health centres through which ICDS Programme is carried out are electrified. Sixteen PHCs are upgraded or selected to serve as 30 bedded rural hospitals. The health set up of 25 ICDS Projects have one or more independent vehicle in working order-27 projects have refrigerators in good conditions, 28 projects reported sufficient stock of medicines, 27 have sufficient stock of vaccines and 28 projects have adequate stock of iron and folic acid.

People's participation is satisfactory. Of the 3185 anganwadis functioning in 32 project areas, 2456 anganwadi centres are run in buildings provided by local bodies or by village and other communities free of rent. These, however, have to be of accepted norms or standards for healthy running in terms of space, ventilation and clean environment. Some anganwadis are run in temple premises. Anganwadi buildings need to be upgraded to satisfy the required norms.

Evaluation of the Programme

At the instance of the Planning Commission, the Programme Evaluation Organisation was called upon to take a countrywide general evaluation of the ICDS Programme. Base-line survey was carried out in July—September, 1975 and a repeat round a year later. Investigation was carried out by staff trained in evaluation work and located in its 30 field offices in various States. The baseline survey assessed the 'stage of preparedness' to mount the programme. The PEO prepared the Evaluation Report in June, 1977 and results were discussed by all those concerned with the implementation of the programme. Certain inadequacies, teething troubles, were then brought out. The inter se priorities among the different components of the programme were not well understood or not well recognised by the project authorities, means of effective coordination between various functionaries—BDOs, CDPOs, MOs—were not satisfactory. Survey and enumeration of households and beneficiary groups were not undertaken systematically but done hurriedly, supply of critical equipment like weighing machines was not satisfactory, supply of medicines and nutrition packets (food) was interrupted. The programme was at initial stages and certain 'out of control' points were not sized up. The Mahila Mandals were formed but remained non-working. Involvement of local women workers was thus lacking.

The outstanding success of the programme was in respect of children of age group of 3 to 5 years. Mothers were still shy to come over to anganwadis. Gradually programme has moved forward. The repeat round evaluation results are flowing in. It is too early to have final results of the investigation. But based on qualitative project level notes prepared by the evaluation officers the following preliminary observations may be made. Firm conclusions will await the final Evaluation Report expected to be available in early 1979.

It has been observed that during 1977-78, th centage of children in 0 to 5 years age group parti ing in the programme at anganwadis has increased cularly in the case of rural projects—Dhakuak Tarapur, T. Narasipur, Ukhrul, Thalli, Neelak Choumanu, Shankargarh ; Tribal Projects locat Utnoor, Garhi and the urban project of Bon Coverage of children in 0 to 1 and 1 to 2 years o has also shown good increase in number, both in and tribal projects. In the baseline PEO study, target group was almost found neglected. There i finite improvement in respect of coverage of chil in 0 to 5 years age group with respect to the progra of immunisation against various types.

In the feeding programme, the number of preg women and lactating mothers has also increased. particular significance is the fact that the food don by the CARE and WFP have been replaced by l recipes/foods. Lack of proper storage facility, irreg supply of the food items and incomplete identifica of severe malnutrition cases are yet positive limitati in the conduct of the programme. Records in regarc health check up are not properly maintained to ass the growth of the child. Here greater involvement a supervision of the health staff is called for.

On the community side, anganwadi level coordi tion committees have not been constituted in ma cases and wherever these are constituted, these ha not been effective. No regular meetings are held. C ordination at local level is very essential.

Suggestions

Certain suggestions to improve the Programme m now be offered. The training imparted for the vario categories of personnel, particularly regarding hea components and functional literacy is insufficient a should, therefore, be improved. The programme co tent may be given a tilt in the direction of health a nutrition rather than non-formal education.

Certain basic infrastructure facilities, especially tho for health components, drinking water supply etc. shou be ensured at the initial stages for the successful i plementation of the programme. Supplies should be a ranged in time and at regular intervals.

Project headquarters should be located within t ICDS Project area, particularly in the case of the urb projects. Supervisory staff should stay in the proje area, if possible in the villages under their jurisdictio to ensure effective supervision and impart necessa guidance to the workers at village level and to enl the ready cooperation of local people. Local peop and local organisations like Mahila Mandals shou be fully involved in the implementation of the progra me. Effective coordination with all departments co cerned in the area, particularly with health authoriti is essential.

The Child Development Project Officer is the lead of the programme and much of the success of the pr gramme will depend upon his own initiative, unde standing, motivation and zeal. He must persona study the performances of all anganwadis in the are identify factors of success and failure to take mi course correction. He must monitor and continuous evaluate the programme by greater field supervisic

Tourism Prospects

S. K. Bose
Journalist

WITH THE phenomenal transportation breakthrough the world has become a global village where men and women leap the gaps of countries and continents in a trice. No wonder, tourism has become a flourishing industry all over the world, a major foreign exchange earner for many countries and a highly profitable economic proposition elsewhere. It is supposed to rank next only to the armanent and the petroleum industries.

Tourism in India is the sixth biggest foreign exchange earner. Statistically speaking India has reasons to be happy over the progress being made in this field. According to the annual report of Ministry of Tourism and Civil Aviation for 1977-78 India's gross foreign exchange earning from tourism was Rs. 283 crore when the country received 19.9 per cent more tourists than in the previous year. India shares still only about one per cent of the world's total tourist trade. Though India is nature's paradise and has an architectuaral, sculptural and artistic wealth, unless we are able to harness the world's almost unlimited wanderlust in sizeable proportions, these have no value. In its broad outline the Government policy on tourism seeks to strike a fine balance between foreign and domestic tourism. It may be summed up thus : while emphasis on developing foreign tourism would contiue, domestic tourism would also be given due importance. There is nothing wrong with the policy as such, but much depends on how it is implemented and what priority is given to it.

In Europe tourism is a highly organised industry working almost to photo-finish perfection. Europe's tourism success lies primarily in its sound domestic infrastructure which helps it sustain foreign tourist traffic of big dimensions. Its chain of hotels from the most posh to the most modest suit all kinds of pockets. Even its humble rural hotels do not by any means lack in respect of cleanliness, amenities and hygienic conditions of food and drink.

Some of India's metropolitan hotels in the public as well as in the private sector are luxurious to match the world standard. In India there are about 25 hotels which have been converted from the old princely palaces. Understandably these are meant only for the affluent Indians or foreigners. Whereas approved hotel accommodation is pitifully scanty. For 6.4 lakh foreign tourists in 1977 the number of approved hotel rooms available were only 17,362. The domestic travellers whose number is legion have to find for themselves just a roof over their head.

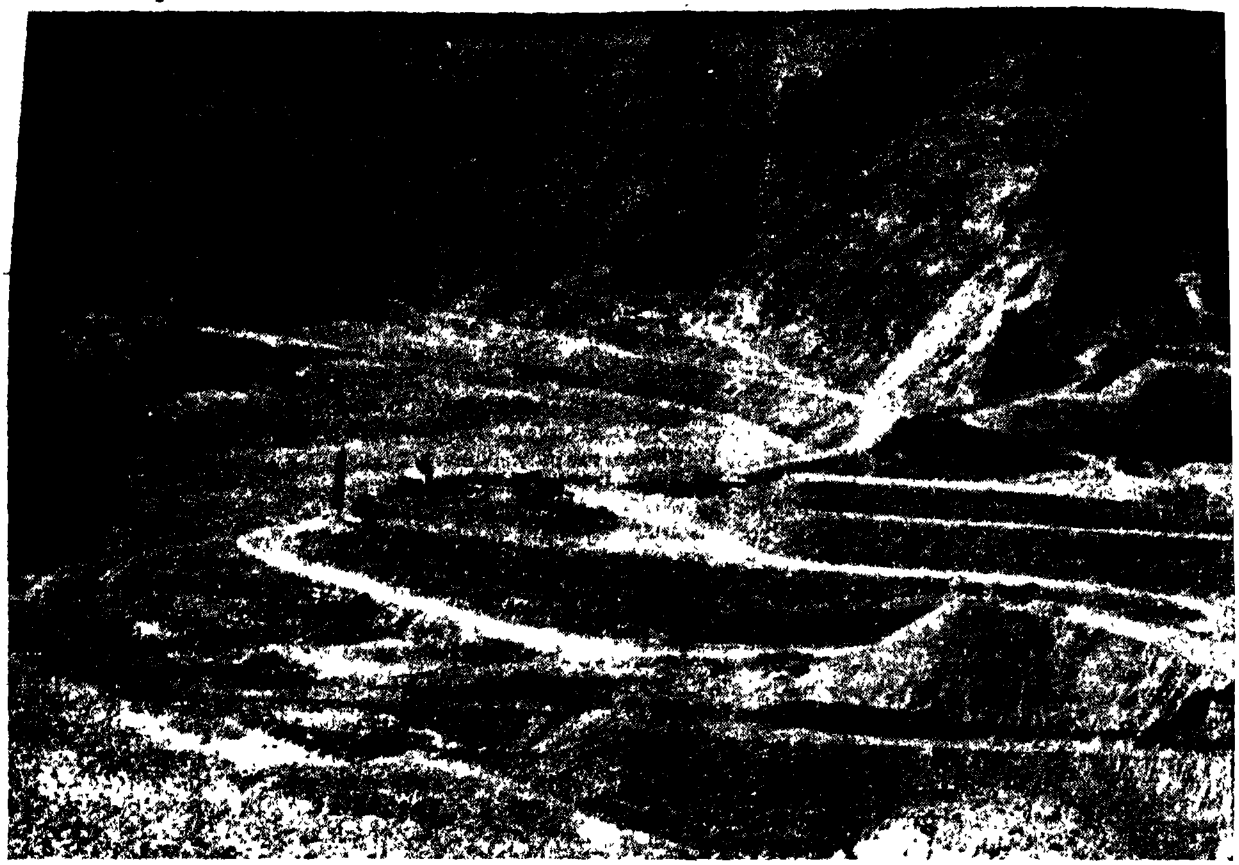
The success of India's effort to attract foreign tourists would almost wholly depend on the development of an infrastructure of domestic tourism whose horizons are virtually unlimited. Known as an invisible trade tourism brings about a silent but sure transformation in a country's development. If one compares the Khajuraho of today with what it was just five years ago one would not fail to notice the rapid transformation the sleepy village has undergone during this short span of time.

Transport and stay are the two primary problems of tourism, and in both these matters India has to make up much leeway. It would be a tall order to suggest that the country's transport systems which are far from satisfactory from the tourist point of view should be streamlined all at once. Till then however group tours of which some beginnings have been made may be organised on a big enough scale and on a regular basis. But since the Government agencies cannot do it alone the private agencies should be encouraged to undertake them. As regards, accommodation the Government's emphasis on developing Janata hotels and youth hostels is rightly placed. Road-side facilities which are now being provided in a rudimentary form by certain States like Himachal Pradesh, have to be vastly expanded. There are places of tourist interest which are not in the main focus at the moment. But given micro-level planning of facilities they can become popular resorts and draw a large number of tourists.

Admittedly the main crux of the problem is finance. The recent conference of the State Tourism Ministers which was also addressed by the Union Minister of Tourism and Civil Aviation brought out that in the central sector tourism has been allotted Rs. 63 crore only in the sixth plan as against the demand for Rs. 191.1 crore. This is apart from the State sector allotment of Rs. 46 crore, by no means a very big amount. In these days of escalating costs tourism would call for a big spending like any other sphere of development. In Rajasthan seven Janata hotels would be built at the cost of Rs. 82 lakh, as was given out by the State's Tourism Minister the other day. Even this may not be too big an amount considering the current price level.

It may reasonably be argued that in a country primarily of an agricultural and village-level production model, tourism is a rather wasteful exercise. But on a broader view this may not be supposed to be so. Tourism offers a double benefit, externally as well as internally. Its immense foreign exchange earnings potential calls for vigorous exploitation. In 1977, Britain earned as much a 3,000 million from tourism, although as a highly industrial nation it has many other sources of earning. Why can't India? The impact of tourism, both external and internal, on the domestic economy is equally important. Its toning effect is all round. Even the rural areas stand benefied. It helps open up villages, set up ancillary occupations and give a boost to our neglected cottage and handicraft sectors. That way, it is quite in line with the Government policy of a rapid rural uplift.

What our tourism needs today is larger investment and an imaginative planning. Such an investment may not prove spectacularly remunerative in the short run but would prove highly profitable in the long run. Priority to tourism should be treated as a part of perspective planning. As regards handling, tourism, is highly sophisticated matter and should be dealt with expertise and imagination. □



Salal Power Project Reaches Take Off Stage

S. Narendra

ON THE EMARALD waters of the Chenab river, embracing Dhyangarh, a small hill amidst the imposing Shivalak ranges Salal hydro-electric project is being shaped.

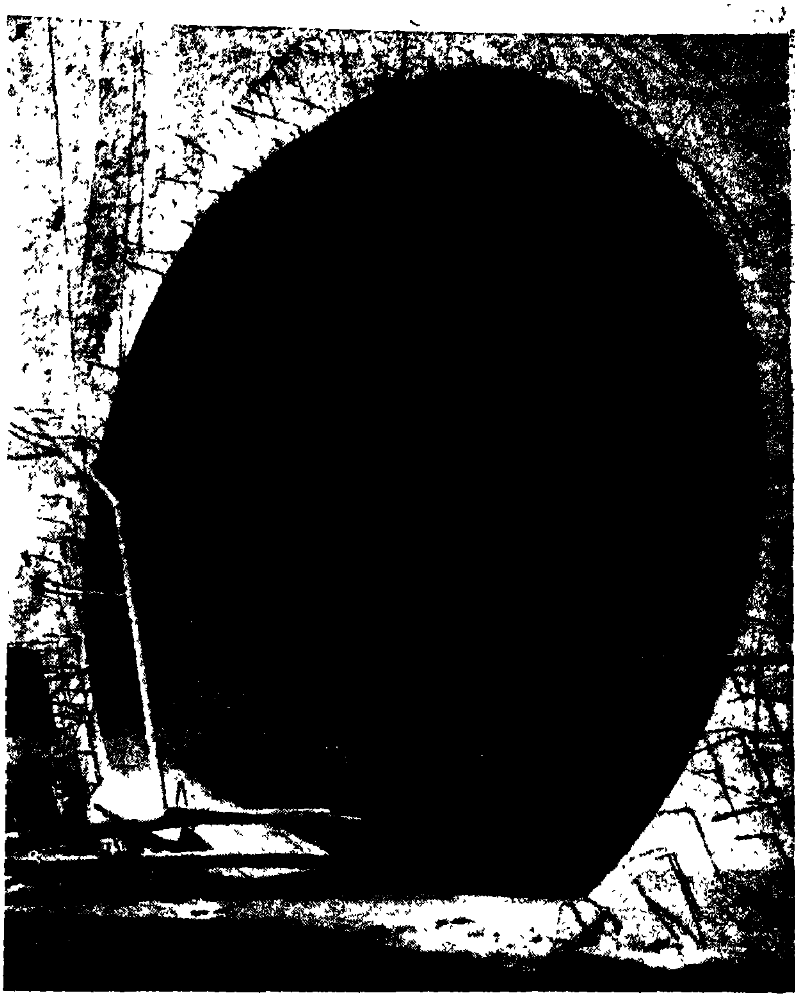
About 10,000 persons are working here to complete the ground work for the two dams, a diversion tunnel and the power house. Despite political and technical hurdles, the preparatory work done so far is impressive. It would save substantial labour and time in getting the project ready by 1985

The project is a run of the river (without live storage of water) scheme meant to produce only power. The Chenab Waters will be impounded by a rockfill dam of 115 metres tall and about 600 metres long. On its left flank, a concrete power dam and spillway (coffer dam) of 110 metres high and 450 metres long, will be built. On the opposite bank the power house will come up 26 metres below the river bed. There will be three units of 115 MW capacity in the first stage. Three more similar units will be installed in the second stage. The waters from the turbines will be let out through 2.4 Km. long (tail race tunnels) twin tunnels burried under the hills.

To facilitate construction work, the river is diverted through a tunnel of 185 metres long, and 9.14 metre diameter, having capacity of about 50,000 cusecs.

The project is estimated to cost Rs. 220 crore and is the largest work in the Central sector in the field of power. Early this year the execution work has been entrusted to the National Hydro-electric Power Corporation, a public sector unit for development of hydro-power. When the first stage is completed by 1985, it will generate 345 MW of power. In a year 2000 million units of power will be fed into the northern power grid bringing an annual revenue of Rs. 31 crore. So far, Rs. 70 crore, or one-third of the estimated cost, have been spent, mostly on creation of logistics and purchase of machinery and equipment.

To facilitate Construction work the river is diverted through a tunnel of 185 meters long, and 9.14 metre diameters having a capacity of about 50,000 cusecs.



The hockey-stick shaped diversion tunnel which is almost ready is proposed to be opened by February 1980. Soon after the monsoons in 1980, a diversion dyke will be thrown across the river. This will signal the start of construction of the coffer (concrete) dam and the main rock-fill dam. By 1984 beginning, the count down for completing the other stages of the project will earnestly begin, so that within a year power is generated.

For the rock-fill dam, one of the highest of its kind in India, the core trench has been dug and rock-fill material has been placed in some sections. About a million cubic metres of earth work has been done on this.

Over a million cubic metres of excavation work in connection with the power house has been completed This power house work is being done by the National Projects Construction Corporation, a public sector unit.

The township at three different sites built earlier has now been found to be inadequate. It is being expanded. Same of the transmission lines, which will take Salal power to the grid, are ready and others are under construction. Some lines, built by Jammu and Kashmir Government when the project was under it, are already being used.

Hurdles

Every project has its quota of problems. At Salal. India and Pakistan came to an understanding on the project in May 1978. The technical aspects had to be cleared by both, after crossing the political hurdle.

The winding hill roads from Jammu, a distance of about 100 kms, obstruct the passage of heavy and lengthy machinery The bridge across Tawi near Jammu can bear only 20 tons weight, whereas equipment as heavy as 70 tons have to cross it. The Nandini tunnel on the way has low head room. Now its bed is being depressed to gain head way.

The project has a School, a good hospital and other amenities for the workers who have come there from all parts of India.

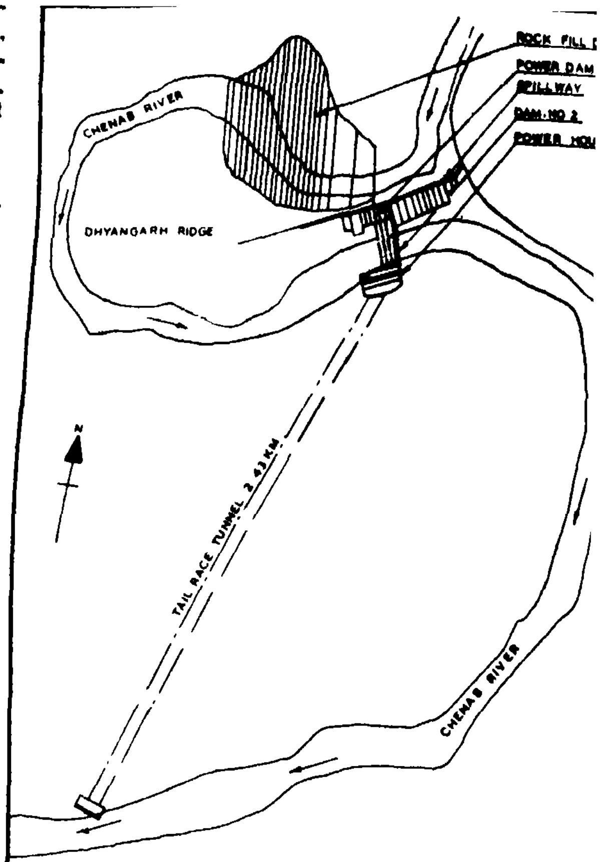
On the engineering side, Chenab refuses to be tamed. Its flow fluctuates between 4,000 to 400,000 cusecs. Winter rains cause floods; melting snows in summer encourage heavier floods; besides, there are flash floods. There are about 180 dry days for actual work but Chenab's anger claims many of them.

The soil around is loose and cause landslides. Rockfalls have claimed four casualties in 1978. Over 50 inches of rainfall aggravtes the communication problem.

Thirty feet below the planned foundation, the engineers have encountered tricky geology. As many as 12 week zones (shear zones), which cannot be strengthened by ordinary grouting, had to be specially treated. An elaborate test laboratory has been set up right on the site to check the quality of grouting of these at each stage. Evolving the appropriate treatment has taken some time. Even then, the work has reached the final stage. Elaborate instrumentation is being done to monitor the behaviour of the foundation after the dam is built. The weak zone treatment evolved is expected to be of great value in the execution of other dams on Chenab, where the geology would be almost similar.

At Dhyangarh fort, which is the project site, there are bull-dozers clearing up the land-slides, trucks hauling up construction materials over culverts, every where people are busy constructing the project.





LAYOUT OF SALAL PROJECT

A dam is a glutton for cement, steel and explosiv and Salal needs 3,60,333 MT of cement, 25,333 M of steel and 1,200 MT of explosives. Non-availabil of these and other crucial construction material c throw work out of gear. □

Quantities of Key Materials Needed by Salal project

1.	Cement	3,60,333 MT
2.	Iron (MS plates, girders, MS rounds, etc.) . .	25,333 MT
3.	Explosives . .	1,200 MT

LOAD OF WORK

1.	Earth work . . .	14.50 mil.cu.m.
2.	Concreting . . .	2.03 mil.cu.m.
3.	Drilling and Grouting .	0.50 million R. Metres

FIRST CLAIMED BY SALAL

1. Largest of the Central power projects und execution at present.
2. The first 'Pedestal' dam in the country.
3. The 'Rock-fill' dam of 115 metres is one the highest structures of its kind.

DIAMOND INDUSTRY IN INDIA —An Export Outlook

R. B. L. Garg

Post-graduate Department of Business Administration, M.S.J. Government College, Bharatpur.

INDIA WAS FIRST to mine and cut diamonds and supply them to the world. It has also the unique distinction of being the first country where nany important diamonds were discovered. The an- :ient field of Golconda in Hyderabad was the first bed of diamonds in the world, discovered about 2000 years igo. The famous Koh-i-Noor, Orioff, Great Mughal, ìancy, Hope, Shah, Florentine, Nassak, Regent etc vere some of the historic diamonds of India. Even in he by gone days, diamonds set in gold were the favou- ite ornaments. History testifies the fact that hand- rafted jewellary from India was known the world over nd adorned the proudest beauties and the crowns of nany a monarch. Even today, some of the priceless :ms from India glitter majestically in museums around ie world.

Though India today may not figure prominently as producer of rough gems, the art of cutting and olishing of diamonds is still known for its originality, ntiquity and quality through out the world.

The diamond industry secures employment on a gest scale as well as earns large sums of foreign change. The industry employs over 2 lakh artisans present as compared to only about 3,000 persons decade ago. About fifty per cent of the exchange nings represent value added element by way of the our of artisans and craftsmen. Indian diamonds ustry is virtually exporting labour, for, 'roughs' are ported from other countries for processing in lia.

The diamonds cutting in India originally started at na and Banaras. Today it extends to almost the le of Gujarat, Maharashtra (Bombay) Uttar desh (Varanasi) Tamil Nadu (Madras), Rajasthan pur) and Delhi but 80 per cent of diamond cutting one in Gujarat particularly at Surat, Navsari, nedabad, Palanpur, Bhavnagar, Visnagar, Morvi Rajkot. The artisans work in small units for the ractors who trade through jewellers in Bombay

Export Trends in Gem Diamonds

lthough India was considered a home of gem dia- ls, it was only in 1962 that organised efforts were made to export gems and jewellery on a large scale when exports earned a revenue of Rs. 5 crore. During the period 1962—66 these went up to Rs. 10 crore. With the settig up of the Gem and Jewellery Export Promotion Council in 1966, the exports of gem diamonds increased sharply. Today India can claim to have occupied third place among the major diamond exporting countries of the world, having crossed the target (Rs. 350 crore) set for 1977-78.

The major markets of India's gem diamonds are the United States, Belgium, Hong Kong, Japan, Singapore, Netherlands, Switzerland, France etc. The US alone accounts for 20 per cent of the total export of diamonds. An interesting feature of diamond export in 1977-78 was that Belgium emerged at number one position in the export market of Indian diamonds pushing US to the second position. Still more interesting is the fact that Belgium and Israel two exporters of gem diamonds also import from India and export to other parts of the world as their 'own product', so as to own the credit for quality cutting.

Import of Rough Diamonds

The industry depends heavily on foreign countries for the import of raw material. Diamond Trading Company in London supplies us about 60 per cent of our requirements. Other sources of limited supply of roughs are the open markets of Antwerp, Zaire and Tanzania. The total import of roughs in 1976-77 was of the order of Rs. 184.30 crore which increased sharply in 1977-78 to Rs. 297.16 crore.

The Diamond Trading Co. (DTC) also known as Syndicate or Central Selling Organisation, is the world monopoly organisation formed to avoid competition which is considered harmful for such a trade. It being a monopoly organisation regulates supply to keep the prices high. Most of the countries mining diamonds have made agreements with DTC for the sale of their roughs. Unfortunately DTC supplies only smallsized rough diamonds to the Indian industry.

Eliminating Constraints

India is facing stiff competetion in the international market with Israel and Belgium whose workmen cut and polish diamonds in a more scientific manner. Un-

like our exports of 'makable' stuff (not so popular in the US and other countries) these countries export 'sawable' diamonds which are more popular in the United States. Of the several factors hindering the export trade in gem diamonds, a few are: 1) inadequate supply of roughs 2) lack of finance and export credit facility 3) insufficient pubicity abroad 4) inefficiency of workmen due to poor working conditions and the like. Since the indegenous supply of roughs is negligible, as has been pointed out earlier, we have to depend on the supply made by the DTC and a few open markets. It is therefore necessary to augment the supply of raw material through liberalization of the imports of raw material and exploring new sources for mining in the country. Of the total requirements of roughs 50 to 60 per cent is met by the DTC and they can be persuaded for its increase. Further, there is need to lower the duty on the import of raw diamonds (which is being considered by the Government) or completely abolish it keeping in view the nature and usefulness of the trade It is significant to note that rough diamonds are being smuggled into the country to the extent of Rs. 50 crore in an attempt to dodge the 5 per cent import duty which is considered a heavy burden on the trade. Another reason of the large scale smuggling is believed to be an obligation on exporters to buy 20 per cent of the roughs from the Minerals and Metals Trading Corporation which is reported to supply on prices about 15 to 20 per cent higher because of their commission, insurance, handling and service charges. As far as augmenting of local resources is concerned, the experts are of the view that the mines in Panna, Kollur and the exhausted mines of Golconda will yield more and better quality diamonds, if serious efforts are made in this direction. The attitude so far has been indifferent to diamond mining. According to experts, rough gem diamonds can also be mined in certain areas in Kashmir, Rajasthan and Madhya Pradesh as is evident from the available indications. It is, therefore, necessary to undertake geological surveys. It must be sufficiently clear that if the DTC monopoly has to be broken it would be necessary to develop our own resources.

The problem of finances and lack of export credit facility for the importers of Indian products are two important factors encumbering our export trade in diamonds. The credit squeeze policy of RBI has been deterrent on the way of getting liberalised supplies from the DTC. The foreign buyers are required to extend a minimum of 90 days credit to their customers who manufacture jewellery whereas our rivals like Israel offer long term credit facilities with a view to attrac more foreign trade business. As a result they dep on suppliers to augment their resources.

Advertising and publicity is necessary for augm ing the export of items like gem diamonds. Des having occupied pedestral position in this trade in past and maintaing a third place in the export of g diamonds, India somehow has not emerged as a co try that produces quality diamonds. The popu image of Indian gem cutting is that of a traditio industry using old-fashioned tools while fact is that country's lapidarists have the best machinery. low publicity budget is one of the reasons of this ima which is limited to a bare Rs. 20,000. Today, In has a reputation in 'makables' which is an insult to country that has produced Koh-i-Noor, the Gr Moghul, the Orloff and other well-known gems. Th is much to publicise the fact that India cuts worl best diamonds and can process, bleach and drill pear that 'minakari' (enamel) jewellery is an Indian sp ciality and that only Indian craftsmen know, how set jewellery in jade.

The poor working conditions in any trade whats ever, affect efficiency of the artisans. Of the total 10,000 units where around 10,000 cutters and pol shers work, Surat alone shares 8,000 units where 9 per cent of cutting and polishing is done. But the plac where the artisans work is hardly suitable from heal and hygiene point of view. This requires to be im proved in order to boost the efficiency of the work men.

Needless to say, diamond industry of India is o of the most important exporting industry which h tremendous potential of labour employment. While other industries an investment of Rs. 18,000 is require to create one job, the gem and jewellery industry r quiries an investment of as little as Rs. 1,000 t provide employment for one person, with a 'work earning, on the average about Rs. 300 to Rs. 400 p month. The industry is entirely indegenous and the is no foreign collaboration either by way of know-ho or equity participation. This highly important industr has vast potential for development provided effor are made to solve the problems The setting up of th India Diamond institute by the Gem and Jeweller Export Promotion Council at Surat is an importan development which will help training personnel i modern techniques of diamond processing and marke ing. It will also help managing cutting and polishin units within the country. ☐

Heavy Unit Exports increased

The export performance of public sector units under the department of industry in January 1979 amounted to Rs. 56-60 crores. But the execution of export orders in December 1978 was only Rs. 14.48 crores. The value of export orders received during January 1979 was Rs. 3.80 crore. This was more than double the orders worth Rs. 1.63 crore received during December 1978.

The total value of export orders executed durin April 1978 amounted to Rs. 226.73 crore. It wa Rs. 178.38 crore during January 1979. The expor orders of Rs. 846.54 crore worth are pending with th various public sector units at the end of January 1979 The major orders under execution are with EPI Rs. 578.84 crore ; BHEL : Rs. 191.75 crore; HEC Rs. 22.66 crore; Jessop : Rs. 10.90 crore and Braith waite : Rs. 10.52 crore.

Prohibition : Pros and Cons

V. K. Sthanunathan
Member, Rail Tariff Enquiry Committee

EVER SINCE the present Government announced its decision to introduce prohibition in a phased manner there has been criticism, some veiled and others direct, against prohibition. Some have called the move a case of misplaced priorities. This article attempts to answer the arguments against the early introduction of prohibition.

The economic dimension

The first salvo that is always fired against prohibition is based on the question of the loss of liquor revenue. Critics have created the scare that there would be a decline of resources, thus hampering in turn development activities in the country. The case for prohibition is also fundamentally a fiscal problem Where does all the liquor revenue come from ? The answer is simple—mostly from the backward and the economically poorest classes of the community We must now ask ourselves the question : can the poorest sections of the people afford to spend their meagre incomes on liquor at the cost of more essential commodities like food and clothing ? Is not then prohibition aimed at enhancing the essential commodities by consumption of the poor through putting more purchasing power in heir hands ?

As the tax paid on liquor is only a part of the price paid for the liquor, the saving of the community will be larger than the loss of tax revenue to the Government. This saving will go to improve its nutrition and health, giving better clothing, housing and entertainment and bring about an increase in the general level of living. The excise revenue from liquor is estimated by the Jha Committee on Indirect Taxation to be about Rs. 460 crore annually. At the existing levels of taxation if the excise revenue is of the order of Rs. 460 crore the total expenditure on the purchase of liquor by the people should be of the order of over Rs. 1500 crore. What prohibition if properly enforced would do is to put Rs. 1500 crore more of purchasing power in the hands of the poorer sections of the community to spend on better food, better housing, better health and education and to improve their standard of living. Is this not the result contemplated in expending planned resources by the Government ? It will be seen therefore that the case for prohibition is primarily based on economic grounds for the improvement of the people.

Another point which is pertinent here is that the loss in liquor revenue would be partly made good by increase in excise revenue on other items or whose consumption increased. Prohibition would lead to enhanced consumption of essential items like food, clothing and other necessities, thereby increasing the excise and other revenues from sources other than liquor. New taxes to yield revenues to compensate the net loss can also be levied. In fact, many economic studies have shown that excise levies on liquor are regressive with the brunt being borne more by the poorer sections of the people. The State has to think of taxes more equitably spread over those sections who can afford to pay depending not upon the miseries of the drinking classes but on the rising living standard through affluence. As for the loss of employment in the liquor business, this will be offset by engaging them in other enterprises making essential goods on the purchase of which the expenditure of the public will be diverted.

There is no doubt that the success of prohibition would hinge on its firm implementation. It is here that grave fears are raised. A point is made that the introduction of prohibition would leave a trail of liquor tragedies by giving a fillip to illicit liquor distillation. The experience of the two States of Gujarat and Tamil Nadu, where prohibition has been in operation for several decades, would show that liquor tragedies are no more numerous there than elsewhere in India. A strongly committed government could prove equal to the challenge of enforcement demanded of this useful measure

A social evil

To descend from the economic dimension to its social aspect is to further strengthen the case for prohibition. A great social evil, the harassment and ill-treatment of women and children may be traced to the drinking habit of the males in the poorer sections. This has brought in its wake the ruin of the entire family. Numerous are the cases where the wife's jewellery is pawned and the women folk are mercilessly beaten and the money which would otherwise go towards the children's education and better living, is frittered away on drinks in a fit of gay abandon. Prohibition's biggest salutory effect would be an improvement in the social environment. Is not social peace in the poorer homes worth the so called loss on liquor revenue to the Government ?

Two visual pictures always haunt me when I think of the subject—one is that of a tear-laden women, the wife of our neighbour in Kerala when I was a small kid in the 1920s. This house-wife every evening used to take shelter in our house to escape the beatings she would be subjected to by her drunken husband. Her gold and jewellery had been pawned and the family driven to economic ruin Those mist-laden eyes of our neighbour's wife left a deep impression upon me as a child. The other picture is more recent—Calcutta of the 1970's In the servant's quarters, attached to one of the officer's residences, the husband used to get drunk, create a brawl and beat his wife mercilessly. This sordid drama was being repeated daily and one day the grown-up son took up the cudgels to protect his mother and in this struggle the father was killed. The son today languishes in jail for homicide. Similar tragedies are being enacted in many a home in the villages and towns of the country The financial appraisal of such an important measure only in terms of the loss of liquor revenue seems absurd in the face of the incalculable social loss to the community in the form of broken homes neglected children and human misery.

The moral aspect

Let us now move from the economic and social benefits of prohibition to the moral aspect. Prohibition has been dubbed by some drink enthusiasts as

moral fad of some puritans. It would be relevant to point out here that prohibition is comparable to Drug Control. When we can have a Narcotic Control Act, why not prohibition of liquor. As drugs lead to anti-social activities, so do drinks. Prohibition is thus only an instrument of the State to regulate anti-social activities. Mahatma Gandhi rightly wrote thus in 1921 :

> "You will not be deceived by the specious argument that Indians must not be made sober by compulsion and that those who wish to drink must have facilities provided for them. The State does not cater to the vices of the people. We do not regulate or license houses of ill-fame. The State does not provide facilities for thieves to indulge in theiving I hold drinking to be more damable than thieving and perhaps even prostitution. Is it not often the parent of both ? I ask you to join the State in abolishing the liquor shops."

The liquor lobby has gone to the extent of quoting, or shall I say misquoting, from the Hindu scriptures to buttress its position. While it might be true that drinks were available in ancient India, it would be a travesty of facts to assert that there was sanction under Vedic religion or Hinduism for drinking. The mere fact of drinks being available or for that matter other vices being prevalent, does not imply their public acceptance. On the other hand, there are strict strictures in the Hindu scriptures, Shastras and Puranas against the evils of drinking. Drinking was considered as one of the Mahapatakas or serious sins deserving severe punishment and heavy penalties have been prescribed for drinking. It is common knowledge that over the centuries and to this day drinking is still frowned upon by society and persons who are addicted to drinking are still referred to in social circles with disparaging remarks. In regard to Muslims, the Quran condemns drinking strongly. Some of the Arab States have State-imposed prohibition.

There is a belief in some quarters that prohibition is an extreme step, amounting to moral compulsion and perhaps the same results could be achieved by recourse to educative publicity and propaganda. The point to remember here is that the ill effects of drinking are quite well-known and public opinion in India is already against drinking. Our people have been taught over the centuries to shun drinking. In this background is it proper for us to tempt the people with open liquor shops ? It is the free availability of liquor that has led to large numbers grabbing the bottle, perhaps, first out of curiosity but latter as a slave to the habit. The statutory warning that cigarette smoking is injurious to health is not preventing people—even very well educated people—from smoking as long as cigarettes are available.

An interesting point of view ladled out by some sections is the concept of permitting moderate drinking. This section argues that what needs to be abolished is not drinking, but drunkenness, not liquor but alcoholism. According to medical authorities, even moderate drinking over long period is injurious to health. Apart from this, all alcohol addicts are those who first started as moderate drinkers. Drinking to moderate drinking and to excessive drinking is one sequence which just follows. If therefore, alcoholism or excessive drinking is to be abolished, moderate drinking must be abolished.

Not by law alone

In the battle against drinking, in addition to legislation it is no doubt necessary to have educative propaganda. The press and the media have to play a constructive role in this. They must persuade, educate and bring home to the public the risks and dangers of the drink evil and the incalculable harm it does to the economic conditions of the poorer sections of the people. Law by itself cannot deliver the goods unless the appropriate social environment prevails. If liquor laws have failed in the past it is because anti-social elements in the society have found it profitable to break them. A civilised community cannot admit defeat. Liberty and freedom cannot be allowed to lapse into licence. ☐

Adivasis March Ahead

ADIVASIS OF WEST DINAJPUR district in West Bengal, as those in other parts of the country, are backward in all fields. To alleviate their hardships, 25 families were given 20 hectares of land, by the Government. But these poor people were at a loss to know what to do, as they had no knowledge of know-how resources and other essential ingredients for cultivation. At this juncture Sri Vayaram Oraon, one of the adivasis with progressive views, took the lead and initiated "joint farming". The help of the district authorities was readily available. Entire land was brought under collective farming. All the adivasis worked on the farm for daily wages. Agriculture department guided them as to how the farming should be conducted along modern methods and other wings of the district administration provided the necessary irrigation facilities and financial assistance. Thus the barren land was turned to a lush green field.

Did this movement stop there ? No. The cooperative effort forged ahead. Under the able guidance of Sri Oraon, the adivasis are relentlessly trying to extricate themselves from the age old backwardness. Their children now go to the primary school, to be taught by Sri Oraon and other teachers. Moreover an adult education centre started under his stewardship is trying to impart the three Rs. to the adivasis. He is able to open a craft centre with the help of Tribal Welfare Department. The Centre is providing some productive activities for the Adivasi women.

Thus the depressed and neglected people of Ariyagaon are progressing under the leadership of Sri Vayaram Oraon. ☐

B. B. Das

F.P.O.—Raiganj

Public Distribution System

THE PUBLIC distribution system in India has now become a regular and essential featuer of food management. The basic objective is that essential consumer article of daily use would be made available at reasonable price to the public, particularly the vulnerable sections of the society. This social objective can be achieved only if the Central and State Governments assume the responsibility for assuring availability of essential commodities and articles of mass consumption to the common man at reasonable prices

The present public distribution system operates through a network of 2.41 lakh fair price shops of which about 1.88 lakh are in the rural areas Out of these about 67,500 outlets are being run by the cooperatives.

Role of Co-operatives

Consumer cooperatives are the back bone of the public distribution system The National Cooperative Policy Resolution adopted at the All India Conference of State Cooperation Ministers, in December 1977, among other things, lays emphasis on the need to build up the consumer cooperative movement in order to strengthen the public distribution system and act as a bulwark on consumer protection and as instrument of price stablilisation. Governoment gives preference to co-operatives while granting licence for fair price shops selling controlled commodities. The structure of the cooperative distribution system consists of consumer cooperatives in urban areas and agricultural or service and marketing cooperatives in rural areas.

Presenting the Union Budgt for 1979-80, the Deputy Prime Minister and Finance Minister Shri Charan Singh told Parliament that consumer cooperatives have been doing commendable work in supplying goods to consumers at reasonable prices. In order to encourage the development of such societies, so that they can play a proper part in the public distribution system that is sought to be developed, it has been proposed to raise the quantum of tax-exempt profits in the case of such soscieties from the present level of Rs. 20,000 to Rs. 40,000.

A four-tier structure of consumer cooperatives now covers most of the districts having a population of 50,000 and above At the apex is the National cooperative Consumer Federation. Then there are 14 State Federations of Consumer Cooperatives and 476 wholesale Central Consumer Cooperative Stores. The latter have 3,500 branches (including about 200 department stores). At the botom are 15,873 Primary Consumer Cooperatives with about 2,500 branches engaged in the distribution of essential commodities. The total value of consumer goods distributed by consumer cooperatives during 1976-77 was estimated at over Rs. 10,040 crore.

Need for New Emphasis

Over a span of time the existing network of public distribution system comprising Government-regulated outlets in respect of food grains, kerosene, soft coke and controlled cloth, the retail outlets of consumer co-operatives in the urban areas and the rural cooperative outlets has expanded and grown in the size and volume of turnover. Even then the phenomenon of fluctuations in production and distribution of several mass consumption items still persist in out economy.

The very first decision taken by the new Government early in 1977 was to assign top priority to increasing the production and thereby availbility of essental articles, both agricultural commodities and manufactured goods. A proposal for increased production and distribution of essential commodities was outlined and circulated to the State Governments for their comments in February 1978. The replies received from the State Governments showed that they generally welcomed the basic approach. The scheme was discussed at the meeting of the Chief Ministers held in New Delhi on 5th January, 1979 and was unanimously endorsed by all the State for its effective implementation from 1st July, 1979 The salient features of the scheme

are as follows.

Area and Population Coverage

The general facilities under the public distribution system are normally made available for all sections of the population. Some States, at present, have, however, adopted a restrictive norm based on income criterion in respect of certain articles. The proposed system shall continue to be operated generally on an area basis as at present, leaving restrictions on the basis of income criterion to be decided by the States depending on local conditions and factors. The distribution in urban centres may also cover the student population, particularly those residing in hostels. In rural areas, the objective will be to ensure that every village or a group of villages having a population of 2,000 and above has a fair price shop. The headquarters of a village panchayat, irrespective of its population, may also have a fair price shop. In remote and inaccessible areas, particularly in tribal belts, the population coverage of a village or a cluster of villages, as the case may be could be even a thousand. State Governments will expand the retail outlets on this basis and as much use as is possible, will be made of privately owned fair price shops subject to their coming under the code of discipline prescribed, in addition to cooperative and public sector outlets.

Commodity Coverage

For the present, the coverage is proposed to be confined to the following commodities :—

(i) Foodgrains (wheat, rice and coarse grains);

(ii) Processed edible oils;

(iii) Common clothing;

(iv) Kerosene and soft coke ; and

(v) Selected manufactured items

The inclusion of additional agricultural and industrial items may be considered for each region or State on the basis of an assessment of all relevant factors including modalities of their procurement, distribution and other arrangements for ensuring steady and regular supplies to the retail outlets, in consultation with the State Governments. Government of India is appointing a committee to identify industrial commodities to be included in the scheme.

Price Support for Agricultural Commodities

As a measure for encouraging more production, Government have already announced support prices for wheat, paddy, gram, groundnuts soyabean, sun flower seed, mustard seeds, arhar, moong and raw cotton. Adequate care is being taken to ensure that these are not only remunerative but act as an incentive for production and larger market arrivals in the harvesting season. Public sector agencies and cooperatives engaged in price support operations have been strengthened, both administratively and financially to ensure that they are able to purchase all the stocks offered to them at marketing centres, at the announced support prices.

Procurement, Buffer Stocking and Supply

For successful implementation of the scheme, it will be necessary to set up satisfactory institutional arrangements for procurement, buffer-stocking and supply, the responsibility for which will be assumed by the Central and State Government. For this purpose, stocking-cum-distribution centres will be located in eac State/Union Territory. Subsidies, if any, by the Centr Government will be confined to buffer stocking op rations only. For the purpose of undertaking procur ment and buffer stocking operations, a nodal organ sation has been designated for identified commoditie

(i) Food Corporation of India in respect c wheat and rice;

(ii) Union Ministry of Petroleum/Indian Oil Corporation and other public sector Oil Cor porations for kerosene;

(iii) Department of Coal/Central Agency for sol coke;

(iv) National Textile Corporation and Nationa Cooperative Consumers Federation for com mon clothing; and

(v) A Central Public Sector Corporation (to be set up, if necessary) in respect of oils and oilseeds.

In respect of selected manufactured goods, the Centra Government shall assist, where necessary, in the establishment of direct links between the manufacturers and the States|Union Territories and|or their approvec agencies including cooperative for distribution of such items. A Standing Committee is proposed to be constituted by the Central Government to organise and coordinate such arrangements. At the State level the suply arangements will normally be made either through the State level Cooperative markeing Consumer Federations or Civil Supplies Corporations.

Public involvement and Vigilance

One of the important aspects of the scheme is the effective supervision over fair price shops. This is expected to improve a great deal through public participation, particularly in ensuring the quality of supplies, their availability at fair prices, better service to consumers and elimination of malpractices like "ghost" ration cards and adulteration. Consumers Committees with local public participation at various levels are proposed to be set up for this purpose. The State Governments should while, granting licences to fair price shops, stipulate suitable conditions so that licencees accept a voluntary trade discipline including supervision by the consumers' Committees.

Central Coordination Committee

Ministries of the Central Government concerned with the production of various essential commodities shall be directly responsible for the production and supply of the identified items. In order to review the progress of the scheme and to ensure the needed arrangements for coordination, a comittee is being set up under the chairmanship of the Minister of Commerce, Civil Supplies and Co-operation with the concerned Union Ministers and Secretaries to he Government in respective Departments as members.

Monitoring and Information System

Considering the added responsibilities of the Central and the State Governments, monitoring and information systems are proposed to be strengthened both at the Central and State levels. This will help in maintaining a constant watch on production, availability and prices of essential commodities and to take necessary action well in time whenever distortions appear.

The operation of a permanent public distribution can be successful only if there is a joint effort of the Central and State Governments. Their relative roles and responsibilities have also to be clearly understood. It is envisaged that the responsibility of the Central Government will be formulation of the National policy, adoption of measures for increased production, general price stabilisation, price support operations, imports, buffer stocking and arrangements for supplying to the State Government commodities for which bufier stocks are maintained. The State Governments will have to assume full operational responsibility for arrangements within the State for the distribution of essential commodities through the public distribution outlets. The State Governments will open additional retail outlets. Wherever, necessary, monitor and supervise the functioning of such shops, set up consumers' committees and assume all other administrative responsibilities that are necessary at the State level for the successful implementation of the scheme. Wherever possible State Governments will also have to ensure that cement, kerosene, paper, clothing and other items are distributed through these outlets, especially those run by the cooperative sector and ensure viability of these units.

Financial Responsibilities

As the Central Government will be assuming financial responsibility of a considerable magnitude for price supported and buffer stocking operations, for making available certain essential commodities to the State Governments, it may have to be ensured hat the benefit of subsidy on buffer stocking is not neutralised by the imposition of taxes or levies on such commodities by State Governments or by their recovering the cost of administrative over heads from the consumers. The State Governments may distribute such commodities, as far as possible, within the margin as may be agreed to by the Central Government The State Governments should also consider relaxation of sale|purschase tax on essential commodities particularly those which enjoy a direct or indirect subsidy and are distributed through the fair price shops. Simultaneously, they should consider a reduction in the burden of local taxes on such essential commodities.

The operation of a permanent public distribution can be successful only if there is a joint effort of the Central and Sate Governments.

Welfare for all

The permanent distribution mechanism which the Government is seeking to create and put into operations from 1 July 1979 would aid and guide in the allocation of mass consumption items to all sections of the society in a fair and equitable maner, so that the unorganised sections of the society do not become victims of blind market forces. On the whole the new scheme is designed primarily to cater to the needs of the weaker sections of the society. □

Number of Fair Price|Ration Shops and Population covered by them

State	Number of fair price shops	Population covered (in lakhs)	As on
Andhra Pradesh	22,153	435.0	30-11-78
Assam	13,039	163.3	31-7-78
Bihar	27,109	632.3	31-10-78
Gujarat	8,956	325.5	31-10-78
Haryana	4,361	120.0	30-11-78
Himachal Pradesh	2,765	37.3	31-8-78
Jammu & Kashmir	1,167	41.9	31-8-78
Karnataka	14,642	293.0	30-9-78
Kerala	11,813	226.0	30-6-78
Madhya Pradesh	16,540	439.0	31-10-78
Manipur	435	13.5	31-10-78
Maharashtra	27,553	579.0	30-9-78
Meghalaya	1,393	15.9	30-9-78
Nagaland	38	1.1	31-8-78
Orissa	11,203	196.2	30-9-78
Punjab	11,834	167.9	31-7-78
Rajasthan	9,236	286.1	31-8-78
Sikkim	12	0.2	31-3-78
Tamil Nadu	9,850	490.8	30-10-78
Tripura	654	18.0	31-5-78
Uttar Pradesh	25,086	929.5	31-8-78
West Bengal	17,858	519.0	31-8-78
Total (States)	2,37,702	5,930.5	

Number Of Fair Price/Ration Shops And Population Covered By Them In Union Territories

Union Territory	Number of fair price shops	Population covered (in lakhs)	As on
A & N Islands	181	2.0	31-10-78
Arunachal Pradesh	110	1 5	30-9-78
Chandigarh	141	4.1	30-11-78
Delhi	2,193	54.6	30-10-78
D & N. Haveli	24	0.8	30-11-78
Goa, Daman & Diu	393	10.3	30-11-78
Lakshadweep	21	0.4	30-9-78
Mizoram	314	4.2	30-11-78
Pondicherry	176	6.1	30-11-78
Total (Union Territory)	3,553	84.0	
Total (All India)	2,41,255	6,014.5	

Irrigation Works

Under

Employment Guarantee Scheme

Smt. P. Deshmukh
Information Officer,
Maharashtra Information Centre,
New Delhi

THE EMPLOYMENT guarantee scheme, launched in Maharashtra in 1974-75 has attracted considerable attention all over the country because of its impact on the economic conditions of weaker sections of the community. The fundamental objective of this scheme is the guarantee given by the State to provide employment in manual work (gainful to individual and productive to community) to unskilled persons, in rural and 'C-class' municipal areas, who are in need and desirous of rendering manual work. As far as possible, work is to be provided within a distance of 5 kms from the place of residence of the needy persons. Wages are paid to the labourers according to the quality and quantity of work out-put without discrimination of sex. The work enables an average worker to earn Rs. 3 per day of 7 hours work.

The irrigation works find an important place in the scheme. Table 1 indicates the prominent role played by the irrigation department in the implementation of the employment guarantee scheme :—

Table I

Year	Total Expenditure on E.G.S. (Rs. Crore)	Expenditure incurred on Irrigation works	Percentage
1974-75 . .	13.72	10.67	77.8
1975-76 . .	34.43	17.93	52.1
1976-77 . .	49.88	25.91	51.9
1977-78 . .	52.50	26.20	50.0

On major and medium irrigation projects, excavation and earth-work for the canals is the most suited work for the scheme. For excavation in hard rock, drilling and blasting is done departmentally and much removal is done manually under the scheme. Canal works of the Jayakwadi Project and Ujjani (Bhima) Project have been completed to a large extent under this scheme. Earthwork for the earth dams is done under the scheme. Percolation tanks are mostly being done under the employment guarantee scheme. Near wat scarcity conditions are prevailing in many areas of th State due to failure of the rains. In those areas, per colation tanks, village tanks and works in Canals hav been undertaken to provide work for the affecte people.

Sectoral distribution of expenditure under the emp loyment guarantee scheme in the annual plan for th year 1978-79 is: Major irrigation projects—Rs. 1 crore, medium irrigation projects—Rs. 3 crore, mino irrigation works Rs. 16 crore, soil conservation an land development—Rs. 19 crore, roads and othe works—Rs. 6 crore, forests works—Rs. 3.60 crore an administrative charges—Rs. 1.40 crore.

The number of irrigation works sanctioned, complet ed and in progress as on July 31, 1978, is as given i Table 2.

Table II

Category	Sanctioned	Completed	In progress
Major Irrigation (Canal centres)	1019	307	476
Medium Irrigation (Canal works) . . .	265	100	56
Minor irrigation tanks .	1338	284	324
Percolation tanks . .	3634	1180	887
Village tanks . . .	557	414	4
Other minor & Small irrigation works including seasonal bunds in the stream	4848	3624	29
Flood control works .	22	11	1

About 3.55 lakh shown livelihood under the schem works during July 1978. Of which 1.83 lakh wer employed on irrigation works. □

SFDA in Quilon District

P. N. Krishna Pillai

Field Publicity Officer, Alleppey

THE SMALL FARMERS Development Agency in Quilon points out the problems of the small, marginal farmers and landless agricultural labourers in the district. An evaluation of the financial performance and physical achievements of this Centrally sponsored Agency during the last eight years of its existence shows that the Agency has been able to lessen the disparity between the more privileged and the less privileged in the rural sector of the district, by successfully implementing a series of schemes.

Registered on 29th September, 1970, the Agency completed the first phase of its functioning on 31st March, 1976, and is in the second phase since 1st April, 1976. The various programmes of the Agency are implemented through the 17 Development Blocks in the district. Since inception upto the end of 1978 the Agency identified 78,468 small farmers, 1,07,191 marginal farmers and 15,271 agricultural labourers in the district. Out of them, 26,319 small farmers, 37,878 marginal farmers and 4,101 agricultural labourers were enrolled as members in co-operative societies.

Subsidy to the identified farmers got the lion's share of the grants received by the Agency from the Central Government. The Agency received Rs. 224.78 lakh upto the end of 1978. A sum of Rs 5,851 lakhs was utilized for strengthening the co-operatives, by giving them share capital loans and interest-free loans. The remaining portion of the grants received (Rs. 10.598 lakh) was spent on items like administration, survey, evaluation study etc

The total financial allocation for the Agency during the period under review comes to Rs. 235.734 lakh. The excess amount of expenditure over the receipt from the Centre (Rs. 10 954 lakh) was met by the share of beneficiaries in implementation of certain schemes.

Almost all the programmes of the Agency are linked with credit. During the eight-year period, the identified small and marginal farmers received a total sum of Rs. 914.20 lakh as short-term loans and Rs. 186.83 lakh as medium-term loans from the co-operative sector alone. The quantum of credit extended by the nationalised commercial banks to the above categories of farmers is Rs. 70 60 lakh-- Rs. 36.29 lakh as short-term loans and Rs. 34 31 lakh as medium-term loans. Besides this, for implementing various agricultural development schemes by the small and marginal farmers, the cooperative land mortgage banks have disbursed long-term loans, spread over a period of 7 to 15 years, to the tune of Rs 107 29 lakhs.

Soil Conservation Schemes were implemented as community schemes in the eastern parts of the district by way of permanent improvements on their lands with the main objective of creating durable assets to the small and marginal farmers. Soil conservation works have been executed in 3063.90 hectares. As these schemes were labour-intensive, assistance in the form of bulgar wheat from "CARE" was also provided, besides 50 per cent of cost as subsidy from the Agency. With the construction of contour bunds in an area of 3063.90 hectares, about 12 25 lakh mandays of rural labour could be created.

The Agency has been providing assistance to identify small and marginal farmers to execute land development works at the rate of 25 per cent and 33.33 per cent respectively. About 900 works comprising an area of over 400 hectares had been executed so far.

Under the scheme, Community Irrigation Works deep tube wells have been installed to harness ground water in Sooranad North, Mynagappally, Thrikkaruva, Clappana, Chemmekkad, Umayanelloor and Kalakode. As a result, 228 hectares of paddy fields owned by 869 farmers could be irrigated, enabling them even to raise a third crop of paddy The Agency also executed 167 minor irrigation works benefiting groups of identified small and marginal farmers on a community basis. The works include renovation of tanks, construction of bunds, sluices, cross bars, irrigation channels etc.

Under Individual Irrigation Works, digging of well for irrigating mostly coconut gardens benefited largely the weakest among the small and marginal farmers. During the project period upto 31st December last, 8162 wells were dug.

Installation of pumpsets over wells for providing irrigation facilities to the coconut gardens of small and marginal farmers has been taken up on a large scale in the coastal tracts of Quilon and Karunagappally taluks. About 865 pumpsets had been installed.

Single crop paddy fields of 482 hectares belonging to about 1250 farmers were converted into double crop lands in Ithikkara and Cheloor Kayals.

Five tractors and two power tillers were supplied to cooperative institutions at 50 per cent subsidy, on condition that these would be hired out to small and marginal farmers for agricultural operations at concessional rates. The Agency had a scheme to

supply plant protection equipments and modern agricultural implements to small farmers at 25 per cent subsidy, to marginal farmers at 33.3 per cent subsidy and to co-operatives at 50 per cent subsidy. So far, about 1500 plant protection equipment and over 19200 hose ploughs had been distributed. To popularise improved farming practices on major crops like paddy, tapioca, banana and pulses among the marginal farmers, the agency implemented a scheme of supplying fertilizers at 33.3 per cent subsidy, subject to a maximum of Rs. 100 per season. On important crops, 2145 demonstration plots 325 fodder grass plots, 2500 gardens attached to the "One Lakh Houses Scheme" and 520 homestead gardens were laid out. Seeds, fertilizers and insecticides were also arranged for supply to farmers.

To supplement the farm income of identified farmers and agricultural labourers, the Agency implemented a scheme for granting eligible subsidy to them for subsidiary occupations like dairy, goat rearing, poultry farming, inland fishing etc. Over 5,400 dairy units, 27,250 goat units and 1,000 poultry units were set up during the report period. Since 1976-77, the supply of goat units has been restricted to the weakest among the marginal farmers and agricultural labourers, preference being given to persons belonging to Scheduled Castes and Tribes. Nearly 150 country boats and nets were supplied at subsidised rates to fishermen residing in Perinad panchayat, which was selected under the Intensive Area Development Programme of the Government of India. Over 60 persons belongi Scheduled Castes and Tribes were supplied with dra bullocks and carts.

To provide wage employment to the unempl agricultural labourers, the Agency implemented scheme for construction of rural roads, irriga channels and sluices, renovation of tanks etc. Kottarakara taluk. About 1.5 lakh mandays of lab was utilized in over 80 work under this scheme.

Under Rural Artisans Training programme, rural artisans had been trained in different trades repair and servicing of farm machinery and im ments, black smithy and carpentary. A few trai artisans were also given financial assistance for sett up their own workshops. Under another scheme, ab 90 women belonging to the weakest sections were i parted training in tailoring and 73 sewing machi were supplied to them at subsidised rates.

Apart from these, a market with adequate stor facilities has been constructed at Charumoodu Perinad panchayat. The share of expenditure of t Agency towards this is Rs. 1 lakh.

To facilitate the marketing of milk and milk pr ducts, milk co-operatives were given subsidy for pu chasing cycles, cans, fat testing machines etc.

Almost all the programmes implemented by t Agency were employment generating in nature, a hence were of immense help to the poorer sections the farming community who constitute the majori in this district. □

They Did It

Daya Prakash Sharma
Field Publicity Officer
AGRA

ATOOSH, in Achnara block near Agra in U.P. was like any other backward village in India till recently. The people, about 1500, were languishing under extreme poverty, illiteracy and illhealth. Their way of life was pregnant with blind beliefs, taboos and superstitions. Myriad lifes swarming on the rain water and the refuse from houses, drained into the ditches on the so called roads, was a common sight. Pair of bullocks under a yoke was still the means to till the soil and other methods of cultivation were primitive. Lack of communication facilities rendered the Atoosh people ignorant of the experiments being conducted in the Agriculture Training Centre at Bichpuri, a nearby place. Sri Pratap Singh, a retired colonel emerged as the saviour of the villagers of Atoosh. For a long time opinions were exchanged between him and the guardians of traditional living. Sri Singh convened a meeting of the villagers and was able to implant in the villagers' mind the need for improving their life style, thus, heralding the dawn of a new era in the history of Atoosh village.

The spirit of cooperation, and dedication, newly injected into their blood brought them together to transform the face of the village. Pucca roads, neat and clean, were laid, both within the village and to the nearby ones. The communication facility established between Atoosh and Bichpuri opened many new vistas of progress to Atoosh people who wer no better than a frog in the pond. Cereal base agriculture under old-fashioned methods of cultivatio was gradually converted to high yielding varieties b adopting improved agricultural practices being preached and practised in the Agriculture Trainin Centre at Bichpuri.

No more are the villagers a set of illiterate laz people. After toiling in their fields throughout th day they attend adult education classes in the even ing and send their children to the recently establishe Junior High School. New avenues of more incom gave an impetus to shed their lethargy. Villagers n longer while away their time in litigation. Carpe weaving and other village industries have becom their pastime so also sources of extra income.

Thus the seeds of progress sown by Sri Parta Singh, slowly sprouted and at last flowered with th formation of Yuvak Sanghathan, a youth organisa tion devoted to such activities as rural development child-education, adult education an so on.

Every other Indian village needs a person lik Sri Partap Singh to realise the true connotation o development and to put into practice the aims ou Father of the Nation had cherished in regard t village life.

Books

Rural Calcutta

Fringe areas of Calcutta—Development of Three Rural Situations *by S. D. Thapar, Association of Voluntary Agencies for Rural Development, New Delhi;* 167 *pages, Rs.* 30.

TO THE ARMCHAIR proponents of rural development, this book will be a guide towards the *real* problems of rural uplift and the challenges the rural folk and those who want to do something for them face.

Though not far from the matropolis, the three areas covered in this book remained virtually untouched by the going on in the city. Where the farmers continue to cultivate the meagre crops they have done for years and any change is beyond their comprehension. This virtually complete insulation from the winds of change is a challenge to whosoever is interested in their welfare. It would be a sad story if they are not able for long or made to take advantage of the reasonable progress elsewhere.

The Badardah basin a cluster of 29 villages is hardly 20 kms from main Calcutta and is not conveniently accessible to daily commuters. Dairying, poultry-keeping have not been adopted. Hardly any young men go to Calcutta for work. The total number of project persons working outside is estimated at 300, total inflow of remittances at Rs. 1,16,000 i.e. about Rs. 5 per head per annum. There is a lot of water around (the area is at the tail end of DVC system) but no water at the time of need. The area hardly produces anything worth selling in the insatiable market of Calcutta.

In Damodar West Basin too many people are packed in a small, physically handicapped area. This limits the number of economically feasible schemes. Cash crops are not produced and in the absence of cooperation among cultivators, whatever little that is saleable is produced, may be exploited by middle men to their advantage.

The Hooghly River Canal Basin is an example of what can happen when large scale industrial units are set up in a rural area without integrated rural planning. Semi-urbanisation has over taken Fort Gloster, Radhanagar and Rameshwarnagar. Since the area residents have been finding employment in the factories, agriculture has been totally neglected to the disadvantage of the area.

The book places in clear perspective what rural or area development involves and what voluntary agencies can do. Much more than an academic study, it is of practical use and there is need for such studies all over the country so that some rationale and sense can be brought into our planning. In the light of current talk on rural development and district industries centres, industry can come forward to finance such studies because diagnosis of the problem is necessary for treatment of the malady.

Kewal Soeny

Small Industries

Small Industries in India—Commemoration Volume—*Development Commissioner, Small Scale Industries, Ministry of Industry, Govt. of India, New Delhi—Published by J. L. Saaz, Director (Technical Publicity).*

THE PUBLICATION by the Small Scale Industries Development Organisation brought out on the occasion of National Small Industries Fair—1978 is intended, in the words of Secretary, Industrial Development, to meet the growing need of entrepreneurs for authoritative information on the growth of small and rural industries in India. In fact, it is more than that as it, in its various sections, includes papers on industry status in several well defined groups, the state of industry in different states, organisational set up of institutions like S.I.D.O., N.S.I.C., C.I.T.D., etc engaged on furthering developmental efforts in small and rural industries sector and some statistical information. Industry papers on the different groups of industries viz. (i) Mechanical and metallurgical (ii) Electronics (iii) Chemical and allied (iv) Leather and sports goods (v) Food processing and (vi) Ceramics reflect the giant strides made, the problems in the way of further development, future prospects and export possibilities. This section is informative and gives an insight into the potential for growth to help prospective entrepreneurs.

The State Industry profiles are, however, more in the nature of official handouts and give an impression of "little done and undone vast". In most cases the information is scrappy except for identification of slow-growth areas and mention of small industries promotional institutions. A would-be entrepreneur would hardly if ever tell from this which area he has to choose and for what industry. No doubt some profiles as of Maharashtra or Punjab are more informative and helpful. Truly speaking the intentions in the Policy Statement of December 23, 1977 that has unambiguously given top priority to the development of small and village industries were to be followed up by the State in right earnest. For this purpose too it was worthwhile earmarking specific industries for development in particular areas depending on availability of raw materials, proximity of marketing centres, availability of skilled and unskilled labour etc.—in short, a blue print for achieving the objectives. While it was too early to attempt an assessment of their achievements, if any, bearing on the new Industrial Policy, the profiles could try to indicate in which direction the States were moving and what pragmatic ways they found to compensate for slow and tardy developmental efforts in the past.

Even so, the publication is invaluable in providing in a short compass authentic information on small scale and village industries in India, the institutions engaged on their advancement and the scope of their activities.

J. Chakravarty

Land Reforms

Land Problems and Land Reforms by Dr. C. Ojha, *Published by Sultan Chand and Sons, New Delhi, Pages 327; Price Rs.* 45.

POVERTY, massive unemployment and economic backwardness are problems which have defied solution for decades now. One of the major causes for this state of affairs is the defective distribution of available cultivable land all over India and the consequent low productivity.

Before independence, our leaders felt that once we threw off the foreign yoke we could find a speedy and satisfactory solution to all our socio-economic problems.

It is now over thirty years since we achived independence. What do we find today? All the old problems imposed on our peasantry are very much with us. What is worse, some of those problems have, in fact, grown in immensity because of several factors including the rapid rise in our population which threatens to defeat each of our carefully devised plans. It has been estbalished that the rate of growth of the population has been high, but the rate of economic growth has been low.

A comprehensive in-depth study of the land problems in Bihar is presented in the book under review. With the historical background, the study examines the social and economic conditions of the State at present in the context of development in other parts of the world.

There has been a spate of legislation on land reforms in Bihar since independence, but as the foreward rightly observes, the "reformers make more noise than sense and leave sufficient time and loopholes to rig the business and corrupt the empowering machinery". What we notice now is a glaring unevenness in the possession and distribution of land. A tiny insignificant minority of the population continues to possess most of the cultivable land, while an overwhelming majority is struggling hard to make both ends meet from the very small portion of land which alone they own.

The main aim of the abolition of the system of Zamindari was to put an end of the intermediaries who exploited the vast majority of the rural poor. Zamindari has been abolished, but the exploitation of the masses continues. In place of Zamindari we now have the idle rent receiving sections of the population besides the traditional money-lenders and traders. There is also rack renting. With all these factors working at top gear, the human, animal and land capital have been subjected to a new kind of multiple exploitation resulting in extermely low productivity and extensive unemployment and disguised unemployment causing infectious feeling of general discontent and social unrest amoong the exploited peasantry

The book examines in minute detail, and from various aspects, every piece of legislation since independence and lays bare the fact, with as many as seventy-five illuminating tables, that while not much thought has gone into the drafting of most of the legislative measures on land reforms, there has been financial and administrative failure in implementation.

After identifying the causes responsible for the failure of the various land reform measures, the author suggests what should be done to remedy the situation which alone could help increase production, wipe out poverty and unemployment, solve the socio-economic problems and lay a firm foundation for the State's prosperity

There are a number of books dealing with the problems of Bihar and other States, but this o[illegible] somewhat unique in at least one respect; it [illegible] with the land problems of Bihar in a detailed scientific manner.

It is signficant that the land problems of Bihar similar in several respects to other States, and solution for the problems affecting this State have a healthy effect elesewhere in the country. [illegible] is left with the impression that with a little more ef[illegible] the author could have brought out a blueprint for solution of the land and other socio-econimic probl[illegible] of the county as a whole. □

—Arun Sharm

Agriculture

Some Aspects of Change in Agrarian Structure [illegible] *G. P. Mishtra : Institute for Social and Econom[illegible] Change (Bangalore) Monograph No. 4 (Sterling Pu[illegible]lishers Private Ltd., New Delhi, page 76, bibliograph[illegible] Index (Cloth) Price : Rs.* 20.

FROM THE MID Sixties onwards there has bee[illegible] significant technological improvement in agricul[illegible]tural production in India; and an equally importan[illegible] aspect is there have been continuous efforts since th[illegible] inception of planning in India to reform the rigi[illegible] rural society, which are more often simply called 'Lan[illegible] Reforms'. Dr G. P. Mishra using data collecte[illegible] from various secondary sources tried in this smal[illegible] monograph of 76 pages to find out the effect of the technological development and the land reforms on the basic agrarian structure—the agrarian composition of owner-cultivator, tenant-cultivator and landless agricultural labourers, on the production-*cum*-land relations, on concentration of land, income distribution in agriculture etc. The land reforms policy, its implementation and its performance have also been critically evaluated though not in a great detail.

Some of the findings of this study are worth-noting. The proportion of the landless households in the total number of households declined from 23.09 in 1953-54 to 9.34 in 1970-71. Similarly the proportion of tenent-households also went down to 8.4 per cent in 1970-71 from 31.32 in 1953-54. But the proportion of marginal farmers (owning less than 2.5 acres) has increased from 48 per cent in 1961-62 to 53 per cent in 1971-72, and the proportion of small farmers (owning less than 5 acres) remained the same during the period.

There is no improvement in the economic conditions of the weaker sections. The increased prices favoured the large farmers and worsened the position of the weaker sections. The size of the agricultural holdings, amount of marketable surplus, and degree of market dependence for consumption are the important channels through which gains from increase in output and prices are distributed between different classes of the rural population in different proportions.

The work, on the whole, is very well done. The book is dedicated to Professor V. K. R. V. Rao, who is also the general editor of the series, and who wrote the Foreword to the book.

Jandhyala B. G. Tilak

World Economy

The World Economy-History & Prospect
by W. W. Rostow,
Macmillan Press Ltd., London, 1978
Pages—i—XXVii ;
1—833

THE book is a bold attempt at contributing to a unity of view as between the dynamics of demand and supply that is necessary, both, for comprehending the past, and for moving ahead in the next quarter a century or so. The Neo-classical and Neo-Keynesian Economic theories are impunged since both fail to setforth a framework for understanding either the past or the character of contemporary economic problems.

Rostow, accordingly, in the first five parts of the book gives us a glimpse of two hundred years of world economic history from a variety of perspectives. There is an excellent analysis of how population expanded from one billion in 1800 to 4 billion in 1976, and projecting an estimated increase of another 1.5 billion in the next twenty five years. The author narrates the story of expansion in production, its distribution and trade since the eighteenth century. In the context of scarcity and abundance of food and raw material, a description of Kondratieff long cycles is presented. The causes that resulted in the failure of the world economy since 1945, to contain inflation within manageable limits, are searchingly investigated Finally the author presents succint case studies of twenty countries-underdeveloped, developing and developed-in the light of his own "Stages of Growth" theory.

The above examination precipitates the character of the problems facing the world today. For instance. chapter 4 and 9 (together) pose the question of whether population is likely to expand in future. The case studies of the twenty countries, read with chapter 5 questions if existing resources would allow advanced societies to grow, while at once, underdeveloped countries would achive affluence. Chapter 26 puts the question whether in the advanced societies higher average unemployment levels and lower average rates of growth, are to be expected than what has been found in the last three decades or nearly so. It is also asked whether advanced industrial societies have the capacity of containing "wage-push" inflation, by "equitable co-operation for perceived common purposes".

In contrast to Marx—the author of the 'Communist Manifesto' who predicted the doom of Capitalism, —Rostow—the author of the 'Non-Communist Manifesto'—, is optimistic in that he predicts, in *Part Six* of the book, next twenty five years to be critical and by the year 2000, birth rates in the developing coutries will be slowed down ; Malthusian crisis will be avoided, expanded population will have enough food; water and air pollution will be arrested; energy crisis would be over; raw-material for industrialization to proceed, will be available; the pattern of investment, scale and direction of research and developm et, techonlogy etc. will have to change for ensuring growth in the century ahead of us; growth and price stability will be reconciled and finally per capita income in the developing countries will be doubled. Late commers to modern growth can catch up with early commers.

Restow prescribes that to achieve all this, substantial changes in politics and policy are called for. He calls for inter-national co-operation for a better tomorrow.

That material progress is not enough, is realised by the author of the 'Non-Communist Manifesto'. The humanist speaks out for the cultivation of the joys of family, the arts, the religion and for the full expression of unique prsonalities, while "governments and their citizens struggle through the challenging agenda of the next quarter century".

Conventional economic theory deals abstractly the long-run economic change. It does not fully take in its fold willingness of private or public enterpreneurs to innovate, changes in technology etc., and then neat statements of static equilibrium are extracted. Modern theory of growth is also formulated in aggregated terms. Rostow abandons the above methodology as it is of limited use and makes his analysis in terms of dynamic dis-aggregated theory, which makes it possible for him to conceive of a dynamic equillibrium path for an economy and its sectors Conceptually the author is justified in so doing for a book of this nature which seeks to tell us the story of the world economy over the past two hundred years and attempts to chart out our course into the future. What we, after-all, observe in the real world, are dynamic interacting national economics attempting an approximation of optimum sectoral equilibria and not static aggregate processes.

Rostow elects deliberately to choose the more complex dynamic disaggregated theory of production and prices, in an attempt to capture a reasonably coherent view of the evolution of the world economy, over the 200 years under reference, but he does not achieve fully the task he addressed himself to The complexity of the analysis, forces the reader to trace and retrace his steps back again and again. to catch the lost thread ; indeed at times the complexity sort of grins at the reader.

As a footnote to the forgoing it needs to be observed that more regorous statistical treatment of the data would have been more appropriate to an analysis of the data presented in the book. This would have made the data amenable to a more precise appreciation.

The author has not dealt with, systematically, a good many aspects of modern economic history ; for instance the evolution of modern corporations, labour unions, banking sysem and soical legislation are some Then there are the whole set of non-economic factors : caste, religions, social institution, political system, government etc After all the basic determinants of economic growth are non-economic. The author has nothing to say on these. The only explanation the author has to offer in this regard is "in limitation lies mastery". In this perspective something is left to be desired in the work.

Despite the shortcomings, the book, has to be ranked as a monumental work of a master-mind. In the realm of "Economic History" it may easily be given the place, that Joseph Schumpeter's "History of Economic Thought" has acquired in economic thought. Compressing the sweep of two hundred years of world economic history within the combines of two covers, is by itself a formidable achievement Whether one wishes to build on its positive achievements or criticize the failures, it is a major reference that no student in the field of economic history can fail to read with interest and enlightment

Amitava Mukherjee

Reply to the Yojana Review on Planning for a Future less Economy

DURING the course of his review of my recent book titled "Planning for a Futureless Economy" : A critque of the "6th Plan and Development strategy, Yojana, 1st April, 1979 Vol. XXIII, No. 6 Mr. Bipin Behari has informed the readers that he prefers caution and reserve to imagination, that he does not like acronyms, and that he disapproves of invectives. Unfortunately he keeps the readers in the dark about why he rejects (?) the analysis and arguments in the above book

Though he says he has read the book a number of times, some errors about my position as in the book have crept into the review. I would like to correct them : (i) On page 30, Mr. Behari states "Emphasis on feasibility rather than accelerated high growth-rate, adoption of labour intensive projects instead of setting of Mahalanobisian basic industries and inbuilt inflationary potential of the order of 14 to 22 per cent per year, according to Brahmanand, contradict the objectives and claims made in the Draft Plan". The book clearly states that feasibility is not the characteristic of the chosen growth rate; the Mahalanobisian model is definitely rejected in the book; and the claim of labour-intensive projects is criticised on the score that they do not reduce capital-intensity of labour. On page 35 Mr. Behari states the following : "The recommendations made under *Fullmangal* stipulated that the rate of growth of the proportion of money used as liquid-money would be limited by law to 5 per cent. Under conditions of fluctuating rates of growth of the economy because of undertainties beyond human and institutional controls, the restricted elasticity of the money supply may even paralyse the economy". A careful study of he FULLMANGAL proposal will reveal that the average of 5 per cent is struct sequentially over every 5 year period. It is possible during the five-year period for the growth rate of money supply to depart in any one of more years, from 5 per cent norm. In fact the FULLMANGAL proposal is different from the Friedmannian proposal of a fixed rate of 5 per cent growth each year, which is further apportioned in a fixed manner within each year.

Mr. Behari appears to feel that the book lacks caution and reseve and places a premium on imagination. May I ask the following queries ? (i) Is it or is it not true that the capital-output ratio has been rising steeply and so despite technical change ? (ii) Will it not be true that it will continue to rise in future as well, particularly because new land has become scarce, the additional mineral resources can be exploited only at higher and higher cost, additional irrigation and power projects are more and more expensive, additional investment in transportation too is more and more costly and so on ? (iii) Is is not true that the population growth rate is high and has been probably rising, and that the size of population unchecked vill reach nearly 100 crores by 2000 A.D. ? (iv) Even assuming that the relative profits' share is constant, if the incremental capital-output ratio is going up, will not the prospective profit rate go on falling ? (v) Is it not true that before the expected profit-rate becomes zero, the long-term investment process will come to a halt. (vi) Is it not true that currently the average of return to capital is only 7 per cent as comparei 12 per cent fifteen years ago ?

Mr. Behari thinks that it is not possible to hav moral ethical code in society, and a convention of (cipline and social norms in the functioning of the pol cal process. Given the above barring through a qu goal of stationarizing the population-size, is there a other way to redeem the future ? It is not the failu to realize the nature of the future the biggest 'crim on the part of our leaders ? How does caution ai reserve help when the nation is going to be on fire And is not the majority the victim of the policy (shutting one's face against the future ? Should nc the Planners become and act as the lobby for th Future ? And if they do not tell the political leader of the impending doom, not far off, and do not reques them to control the parameters, are they to be admirec for their caution and reserve ?

May I request Mr. Behari also to consider whethei the following criticisms of the Draft 6th Plan are due to my excessive imagination ? (i) The Plan seeks to achieve a 25 per cent increase in real national income with only a 14 per cent increase in the supply of wage-goods, the past experience indicates that the supply of wage-goods must expand at about the same rate as the growth-rate of national income. (ii) With a 14 per cent increase in the supply of wage-goods the planners hope to increase employment by 30 per cent without a massive cut in the real wage-rate. (iii) Without measures like immobilization and on the assumptions of a reduction of foreign exchange remittances of no increment, through credit, to public grain stock the Planners hope to make the income to savings ratio 16 to 21 per cent. (iv) With a 100 per cent increase in money supply and huge addition to indirect taxes, the Planners hope to keep the level of prices constant, even though the supply of wage-goods goes up by only 13-14 per cent. What are Mr. Behari's answers to the demonstration in the book that all the empirical hypotheses underlying the Plan invalidated in terms of all India data taken from the Plan itself.

Mr. Behari would have liked me to constrast the goods in the wage-goods model with the revised minimum needs programme. I am afraid that the analytical purpose of the two are not the same, the goods that enter in either are rather different; even the minimum needs seem to be arbitrarily chosen; by calling a set of services as public goods, won't make the latter more sacro-sanct !

Mr. Behari seems to object to the 'acronyms'; these are harmless strings of letters; they have the convenience of easy rememberability; all the three (including SEMIBOMBLA) have managed to get some circulation, thanks to both to those who dislike them and to those who like them ! If he examines 'HOPERASHHMI, carefully, he will find that the strategy seeks

to take into account the communicational, sociological and institutional problems confronting population-control programmes. Actually the new strategy is very different from those practised in 1975-76.

Mr. Behari has given a quotation from Marshall May I give him another ? 'Truth is the only thing that matters and not peace'. That quotation also explains why the book had to be written quickly Time is *not* on our side, the echoes of the bells of the not-so-distant Stationary state can already be heard (How do we account for the stagnation in private productive investment ? Why are gold and scarce-asset prices zooming) ? The Future is there for any one to see. But then we must have ears and eyes ! should whatever will be, must be ?

Why not ignore INVECTIVES and go over the book again ?

P R. Brahmananda

Reviewer's Submission

AS ADVISED by Professor P R Brahmanand, I have gone over the book once again ignoring invectives but do not find any reason either to alter my views or enter into personal-cum-theoretical arguments

The author's strategy for controlling the Malthusian Devil has already been commented upon The need for restricting monetary expansion according to output and supply of wage-goods (p 178) is innocuous and non-controversial, but quantitative ad-hoc-ism of 5 per cent upper limit on money's annual growth as *per law* stirs the hornet's nest. Even the integrated wage goods strategy which is an important plank of the author's alternative thesis lacks clarity and specificity The definitions of wage-goods as given on pp 172, 175, 176, 179, and on pp 180-181 do not provide suitable analytical or operational guidelines The list of wage-goods given on pp 180-181 is more elusive for any practical use than the "arbitrarily chosen" goods and services included under the Revised Minimum Needs Programme of the latest plan Unless the concept itself is clear, deductions regarding its implications are bound to be faulty

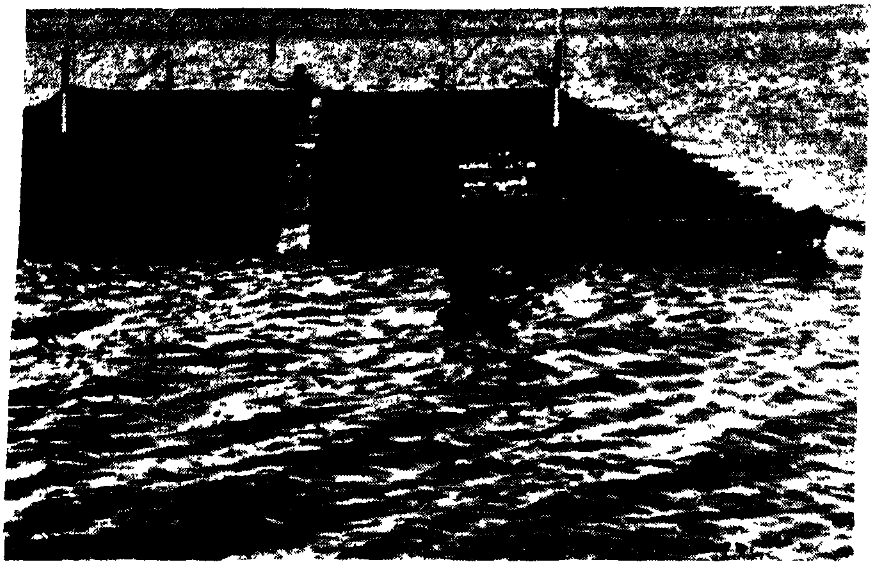
Caution and reserve, if adopted, could have made the analytical exposition concise, errata (as found, for example, on pages 5, 13, 36, 37, 48, 49, 89, 97, 143, 182 etc.) considerably reduced, and operational recommendations effectively tested. The quality of publication would have thus greatly improved

In reply to various queries made by the author, may I venture to cite another quotation from Marshall's *Principles*: "We have seen that the economist must be greedy of facts, but that facts by themselves teach nothing."

Bepin Behari

Further correspondence on the subject is closed

—**Editor**

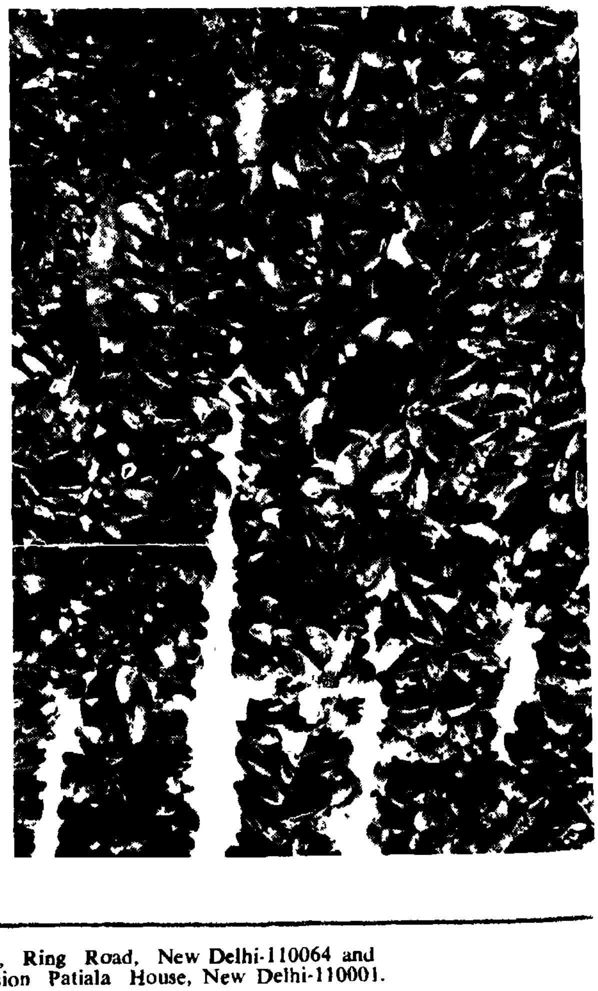


New Strides in Mussel Culture

V. K. Abdulia, *F P.O. Kozhikode*

India has a 4000 mile long coast line. To a considerable extent we are tapping the sources of the sea. But unlike agricultural operations, usually we do not sow it the sea to reap a good harvest, though we have perfected a lot of technical devices to boost the fish catch The Calicut Research Centre of the Central Marine Fisheries Research Institute Elathur has gone a long way in this respect. The development of the kaduk ka or kallummakai which is very popular in the coastal areas of Kerala State has been the target of the Scientists of Calicut Centre. Their experiments with simple methods have proved the the techno-economic feasibility of mussel farming A break-through has been achvied in increasing the production of protein rich mussel in our country The cultured mussels are superior to natural ones because they grow faster, are healthie, and give more meat. Harvesting is easier and production rate is very high

Ten fishermen families at Elathur were selected and were given all technical assistance to experiment with the new techniques. The techniques are very simple. Seeds of kadukka collected from natural beds are tied to the rope of 8 metre length by knitted cloth. A raft is made and the rope on which the seeds are wrapped are suspended from the rafts properly anchored in the open sea in a depth of 5 to 10 metres. The cloth disinte grates in the sea water after a few days and the juvenile mussels get firmly attached on the ropes. Growth of juvenile mussels over the ropes are very rapid and they attain the harvestable size after 4 to 5 months. Availability of the entire vertical water column for the growth of mussel is the crucial feature of the technology developed. One hectare area of the open sea has been found to produce about 500 metric tonnes of mussels within a period of about six months.



To construct a raft 64 sq. metre it may c about Rs.4000—includ labour charges, cost drums, teak, bamboo, Kadukka worth ab Rs.8000 can be produ from such a raft. Tl means a raft earns ab Rs.16,000 a year. This no small income especia for poor fishermen famili While the natural musse give 30 per cent of tl weight, the mussel cultiv ted on the rope give abo 50% of the total weigh

The technical knowho developed by the scientis of Calicut Research Cent of the Central Marir Fisheries Research Institu is of great benefit to tl marginal fishermen an landless labourers, to augi ment their family incom and to achieve the goal c full employment

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and
Published by the Director, Publications Division Patiala House, New Delhi-110001.

'HE STORY OF TOBACCO

MPLEMENTATION
'LANNING

'LANNING FOR POWER

VOL XXIII/11 16 JUNE 19

yojana

80 Pai



INDIA'S SPACE PROGRAMME

OUR ACHIEVEMENTS

BHEL's Landmark in Design

THE FIRST PROTOTYPE D.C. motor rated at 250 kilowatt, 440 volts has been successfully manufactured and tested at the BHEL's Heavy Electrical Equipment Plant at Ranipur near Hardwar. The overall dimensions and output of this motor conform to internationally accepted standard IEC 72A-1970.

This marks a landmark in the design and manufacture of a new series of D. C. motors in IEC frames. These motors are for supply, among others, to Bokaro Cold Rolling Mills and processlines as well as to Mishra Dhatu Nigam Ltd., for the mills.

The 250 KW, 440 volts, 500/1500 r.p.m. D.C. motor has several new and important features and is packed with about 35 per cent more power and torgue as compared to the earlier designs. Other features of this motor are termo-reactive class 'F' insulation, low GD value, high short time overloads, glass banded mature, improved ventilation and constant pressure brush holders.

Cooperative Milk Supply Scheme Earns Profit

IN MADHYA PRADESH the Betul district milk cooperative union purchased 4,77,000 litres of milk through 20 cooperative societies and delivered it to Betul, Serni and Pathakheda areas and also to Bhopal milk scheme. The society members received Rs. 8 lakhs as the price of their milk and the milk union earned Rs. 12.85 lakhs.

With the share capital of Rs one crore, the district milk cooperative union, formed recently, has received Rs. 1.10 crores under the D. P A. P. and the State Government and the Milk Development Corporation have given Rs 6 lakhs to the union. Chilling plants of 4,000 litres capacity are being set up at Betul and Multai blocks and Pathakheda colliery with this money. Each milk cooperative society in the district has been given Rs 3,000 for collecting milk and purchasing necessary implements. All these societies are running in profit and it is hoped that the union will soon have 200 societies as its members and will succeed in installing a chilling plant of 60 000 litres capacity in the near future

16 Per cent Increase in GSFC's Assistance

AN ALL TIME record rise in sanction and disbursal of loans, for accelerating the tempo of industrial development in Gujarat State, has been achieved during 1978-79. 1185 units were approved loans of Rs. 28 38 crore recording a rise of 16 per cent over previous year. Disbursements rose sharply by 33 per cent during the year reaching to Rs. 18.57 crore.

This assistance to the units will catalyse investment of Rs. 65.30 crore in the State. These projects will create employment opportunities for 15,433 persons and generate sales of goods and services of Rs. 169.76 crore, when commissioned

The GSFC has approved 13402 projects with of Rs. 183.34 crore since its inception. The aggr disbursements amounted to Rs. 109.15 crore.

Rural Electrification

MORE THAN 51,000 villages have so far b electrified in the country under the REC-Fin ed programme of rural electrification. The numbe irrigation pumpsets energized exceeds 3.3 lakh an the rural network, over 2.5 lakh kms of power l have been added.

Rural Electrification Corporation had to-date sa tioned 2,150 projects for an aggregate financial as ance of over Rs. 840 crore. Together these proj to be implemented over a period ranging up to years, envisaged electrification of 1.16 lakh new (electrified) villages and energization of 9.73 lakh a cultural pumpsets Besides nearly four million don tic commercial connections and street lights, it proposed to provide power for 1.44 lakh small s agro-based and other industrial units in rural ar

Indigenous New Technique in Steel Welding

NEW TECHNIQUES of electro-slag welding thick steel plates and steel castings of thick of 100 mm and above have been successfully perfe and introduced in the Heavy Machine Building P of Heavy Engineering Corporation, Ranchi.

Strips cut out from the same plates or castings used and this ensures homogeneous welding and minate the use of expensive welding electrodes.

This technique also guarantees welding of spe steels as well as castings of alloy steel and nonfer metals quite conveniently

HEC has also developed a process of remelting sc ped high speed steel tool bits utilising the electro-welding machine and making new tool bits, from same, by forging or machining. Large quantities such tool bits that get scrapped every month are salvaged.

District Industries Centres Make Headway

DURING LAST financial year over 33,495 sm scale and cottage industries were set up in country Of these, 22,453 were artisan-oriented. new industrial units provided jobs for about a lakh people.

It is worth to note that 8,492 of the new small-s and cottage industries set up in the country were blished in the 22 districts of Madhya Pradesh S where district industries centres were opened. Of 4,252 were artisan-oriented. The new industrial provided employment to about 20,000 people.

Thus, a fourth of all the small-scale and cottage dustries and a fifth of all the artisan-oriented indus were set up in Madhya Pradesh and of the total ployment generated in this sector in the country, a was in this State. □

YOJANA

Volume XXIII Number 11
16 June 1979
26 Jyaistha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910, 385481 (extensions 402 and 420) **Circulation:** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy—£0 12 or $ 0 25

Editorial

National Policy on Education

SO MANY policies uneasily coexist in our country that the Draft National Policy on Education (1979) immediately evoked a mixed reaction from the people vitally affected and interested Since the attainment of independence education had been on the melting pot which has yet to yield a recipe, satisfying and stimulating in equal measure Saveral commission and committees have exercised their minds to seek a practical solution to the educational problems until the National Commission on Education indicated a policy which was adopted by the Parliament. The new Draft Policy is more than a quinquennial review as envisaged by the Resolution of 1968. It breaks new grounds, indicates new lines of advance and raises controversies which need to be resolved.

The draft rightly emphasises the urgent need for universalisation of elementary education in the course of the next ten years. It we go by the enrolment figures as a proportion of the total number of children in the age-group 6 to 14, the targets look very much unrealistic An entirely new feature has been the emphasis on non-formal education programmes for the older children who have dropped out of the school and those who have not been to the school. Low enrolment and high drop-outs will however continue to plague the policy makers who have suggested detailed study of the problem with a view to initiating remedial action. Programmes like more incentives, school books, uniforms, mid-day meals, scholarships etc , may ensure reduction in the rate of drop-outs but the resources position will hardly be adequate to cover the expenses.

The new policy is remarkable for the attention it has given to the 230 million of the country's adult population for whom a National Adult Education programme has already been organised. In the way the programme is being tagged to multiple agencies to create awareness of other programmes like family planning, health, nutrition, child and mother care, it is apparent that the adult education programme is beyond the capacity of a single Ministry of Education & Social Welfare. Finding educators both men and women, particularly in rural areas, having the requisite ability to impart literacy, numeracy, functional development and social awareness will be no less baffling as the lack of adequate financial support for the implementation of such a programme.

The Draft Resolution does not spell out precisely the educational structure It appears that the eighth class will mark the end of the clemenary stage and the secondary stage of education will be of 4 years duration. A student will, therefore, have to make, at the age of 14, the hard choice of the stream which he or she proposes to join. The existing system, providing the study of science and mathematics upto class X, contributes to better understanding of the processes of production and enables the common masses in the urban and rural areas to go in for higher studies in science and engineering. Even vocationalisation of secondary education would be more meaningful if it is done at the end of Class X. Massive vocalisation will do more to ease the pressure on universities and offer alternatives to school leavers. But the government must give much more careful and serious thought to it than it has given evidence of doing.

Among others, the regional language as the medium of instruction at all stages will not be to the liking of many who look upon it as a clever urse to banish English and pave ultimately the way for installation of Hindi as the sole alternative to English. Similarly the proposal to charge fees from student at secondary and higher education stages will meet resistance. The bulk of the poor, the lower middle class and middle class families will be hard hit if the process of providing free education at secondary stage of education is reversed. □

LETTERS

Profitability in Public Enterprises

Sir,

The Editorial in YOJANA dated 16th April, 1979 under the above caption is neither revealing nor a novelty. *The facts are known to one and all who have taken pains to have an objective view of the State of affairs in Public Sector Undertakings.* "The officer on special duty" is a legacy analogous to the political appointment "Minister without Portfolio" to confer some special favour on the favourite. There are at least more than 1000 such posts both in Union and State Governments.

It is true that the Public Sector Undertakings are incurring heavy losses whereas they should have been torch bearers for creation of adequate resources for financing Public enterprise and reduce the burden on tax payers. The experience is just the reverse. What are the causes for such a State of affairs in spite of several enquiry committees, commissions and departmental enquiries?

These could be analysed as follows:

1. The Public Sector Enterprises are the rendezvous for granting political favours and patronage either as head of the organisation or at subsidiary level. Norms of Government sanction and recruitment do not apply to these undertakings. Further the recruitment is very often based on relationship, patronage and telephone calls from some VIP's. There is no limit to the potential strength of the establishment. If a few efficient and motivated hands find their entry into these undertakings their hands and feet are tied even in day to day working. It is not as though that an individual by entering from public to private sector suddenly gathers better capability and high talents to make the private sector efficient and viable. But it is the environment his accountability and scope for display of his originality which enables him to make his mark in the private sector.

2. The heads of Public Sector undertakings initially start with good intentions making all solemn promises of a well knit compact organisation. But within a short time one finds the easy channels he can wade through to achieve personal gains and satisfy the ego of his authority. The means for amassing wealth by sev dubious methods are well before him and few can r the temptations. There is little check on the pos physical targets set and achieved by him. By the t he is unearthed by his misdeeds and incapacity godfaher finds him another place of comfort and se rity. On the other hand one has to be imbuded wit spirit of service and sense of pride in the growing pr perity of his organisation. This is acquired over period of years with hard result oriented work in organisation which is hardly recognised or rewarded.

3. The undertakings apart from its normal worki are called upon to involve in several ancilliary activit such as a high style of living, easy and luxurious trar port facilities and palatial accommodation with ev expanding comforts and perquisites. All these a carried out in the name of reception to public ar private visitors, Ministers and Government office who are accompanied by a large entourge during the visits. On the other side one could see the subordinat and the workers living in slums under most insanita conditions.

4. Lastly the very functioning of these fully autonom ous undertakings even when inducted with compete and motivated hands are defeated by the bureaucra of the State/Union Governments who could app spokes at every moment. The result is loss of face fo the heart with his subordinates and demoralisation a the lower levels when they see blatant insults hurdle at their superiors.

A number of probing bodies have gone through a these exercises but none has dared to point out th inner working lest they may be deprived of their own positions, in their present and future assignments. It i rarely that independent free-lancers of high ability eve admitted into such enquiry bodies who could have un earthed the mysteries of Public Undertakings. Even when these unpleasant findings come out they neve see the light as the top hierarchy often finds a place of censor for such reports.

M. K. R. Menon
Tripunithura

A useful journal

Sir,

It is with great interest I saw an Issue of 'Yojana' carrying articles on Archaeology in Vol. XXIII-3, dated 16th February, 1979, which is extremely useful for reference purpose. Since articles ranging from Proto-historic to medieval period and also on preservation in museums it is valuable not only for reference but also for research purpose as it carries article of eminent scholars like Shri B. K. Thapar, Director General Archaeological Survey of India.

Dr. C. Margabandhu
Vadodara-390009.

Readers writing to this column are requested to restrict their letters to two typed pages. They are also requested to give their Complete postal address, clearly.

--Editor

India's Space Programme

Modest but Impressive

India joins the select ranks of the Space Elite

BHASKARA

India's second satellite for Launch

Special Report :

Rosscote Krishna Pillai

Our correspondent, who had a close look at India's space endeavour, gives a graphic account

OVER 7,000 young Indian Space scientists, engineers and technicians, most of them below 30, engaged in India's impressive space programme, described as "modest" by Prof. Satish Dhawan, Chairman, Indian Space Research Organisation, are now agog with excitement, with their senses keyed to a remote Soviet cosmodrome from where the second Indian Satellite (the first was the 360 kg Aryabhata launched on April 19, 1975 using a Soviet launch vehicle) is heed into the Space.

Aims of the Project

The Satellite for Earth observation (SEO) is the first satellite based on remote sensing programme of ISRO for the survey of the natural resources of the country. It aims at conducting earth observation experiments for getting scientific information primarily in the areas of hydrology, forestry, oceanography and meteorology. India's vegetation, snow cover, mineral resources, water resources, sea surface temperature and ocean winds will either be photographed or the relevant data recorded by the satellite.

SEO, an application technology satellite, modelled exactly on Aryabhata, weighs about 444 kg. and has a quasispherical polyhedral shape with 26 flat faces having a diameter of 1.55 metres in the equatorial plain and 1.66 meters along the longitudinal direction. The temperature inside the satellite will be maintained within the limits of 0° and 40°C. The power of the satellite is supplied by a system of silicon solar cell arrays and nickel-cadmium batteries The solar cell array can provide an average raw power of 47 watts The batteries are used to meet the peak power demand during the operation of the primary payloads as well as to supply power during the orbital eclipse and during the launch phase.

SEO will orbit the earth at a height of 557 kms. with an inclination of 50.7°. The orbit height of the satellite is so chosen that the complete coverage of the country is possible with the TV cameras within a reasonable period, say two to three weeks.

The primary payload will include two TV cameras made abroad, and three microwave radiometres called SAMIR. Besides these it will also carry a data collection system and experiments to test the efficacy in space of indigenously developed heat pipes, thermal paints, solar cells and an x-ray sky monitor for astronomical studies.

SEO is expected to give the country a total systems capability which includes (1) satellite fabrication, testing and qualification (2) payload fabrication, testing and qualification (3) payload satellite integration (4) reception and data handling and (5) data analysis More than 20 user agencies including Government agencies, research institutions and universities will use the data collected by SEO.

Two ground stations, one at Sriharikota and the other at Ahmedabad will track SEO. They have facilities for telemetry data, reception and telecommand transmission besides tracking. Facilities for attitud

control of the satellite have also been set up at the ground stations. In the early phase of the mission, the ground station at Bears Lake near Moscow will also be used for monitoring and control operations of the satellite.

A Major Mile Stone

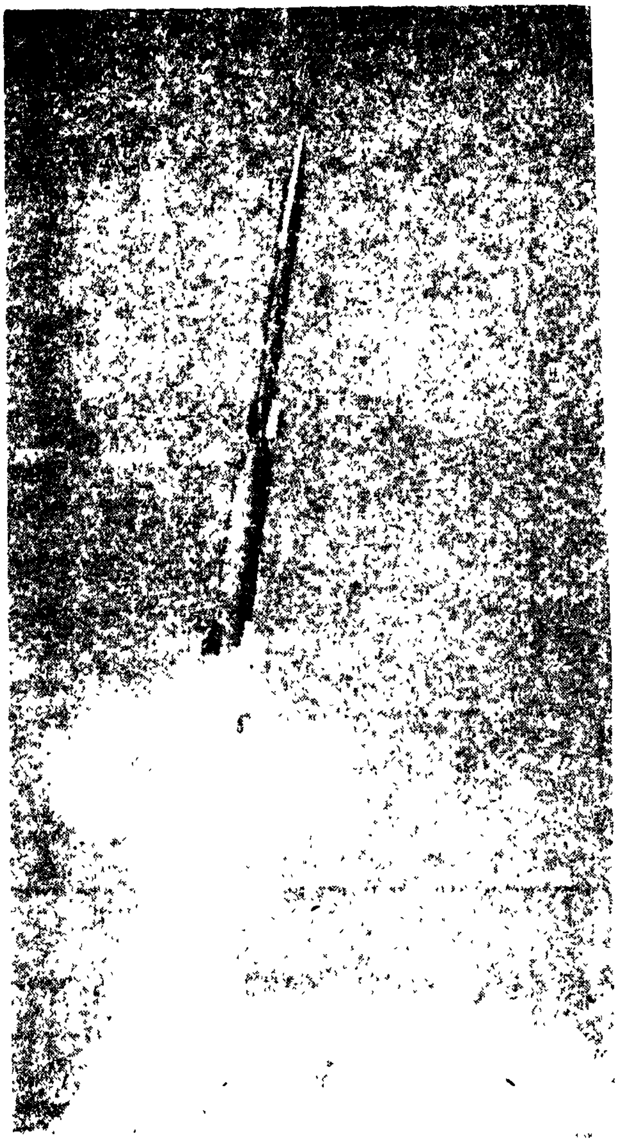
The launch and conduct of the proposed experiments with SEO, if successful, will be a major milestone in India's Space programme with its primary exphasis on Communication and Remote Sensing applications. It will also be a big boost to numerous teams of brilliant young engineers and scientists in over 20 organisations who have been dedicatedly working during the last two years for making a success of the SEO programme. This correspondent, who toured all the major space projects under ISRO in the latter half of last year as a member of an all-India team of journalists and science writers, had the privilege of watching at close quarters the scientists and engineers at work and the enormous number of extremely sophisticated and miniaturised components, instruments, gadgets, machines and sub-systems that they have innovated, fabricated, integrated and tested for supreme accuracy and precision and stringent quality and reliability standards

According to Prof. Dhawan, the aims of the Indian space programme are very different from the goals set by other countries with their emphasis on defence. These were based on an entirely Indian concept of development which must be cost-effective within a limited time-frame. The elements that made up this programme were derived from the unique capabilities of satellites. Prof. Dhawan pointed out that the major objective of the programme were communication and investigation of natural resources. Since our rural areas had very little facilities of communication and education and our communication media catered mostly for the urban elite, the possibility of reaching the maximum number of our rural people using communications satellites had to be tackled. The other objective was the investigation of natural resources using remote sensing satellites.

No Defence Aims

Was it at all possible for a country devoted to developing itself and engaged in a war against poverty to go in for big enough launchers for defence, asked Prof Dhawan Although there was a great degree of similarity among the launchers needed for our space programme and the missiles for defence purposes, Prof. Dhawan asked, "Why do you want a ballistic missile ? What will the missile deliver ?" and without waiting for an answer he said categorically, "Even if you have a launcher, a whole series of steps will have to be taken for making it a missile." He said India, which is scheduled to put a satellite in a synchronous orbit by using its own launcher, could use the same launcher with modifications for delivering weapons. However, our country could ill-afford to divert its not-too-abundant resources for a huge defence programme for manufacturing missiles.

To questions obliquely casting aspersions on the wisdom of making huge investments in the space programme, Prof. Dhawan's answer was that India, which was trying to modernise its technology, could not afford not to have a space programme. He added, "Take the SEO satellite. What it could contribute to the country's development in the next few years is not easy to quantify. The Indian national remote sensing satellites would give from 1981 onwards data on weather phenomena every half an hour." He pointed out that the country has suffered great losses from floods in the last 200 years and said that the gigantic problems posed by floods, drought and other natural phenomena had to be studied Prof. Dhawan added that the communications part of the space programme was a revenue earner.



Although India had spent about Rs. 250 crore in the last 15 years up to 1978-79 and would be spending another Rs. 325 crore in the next five years, the expenditure on space was much less when compared with the other advanced countries which had engaged themselves in space programmes. Japan had spent five times more than India. In Europe, France and Germany had spent 10 times more in the European space programme. The USA and the USSR would have each spent roughly 200 times as much as India for space research. Prof. Dhawan tellingly pointed out that what was spent on the Indian space programme was not even as much as the cost of four Boeing-747s.

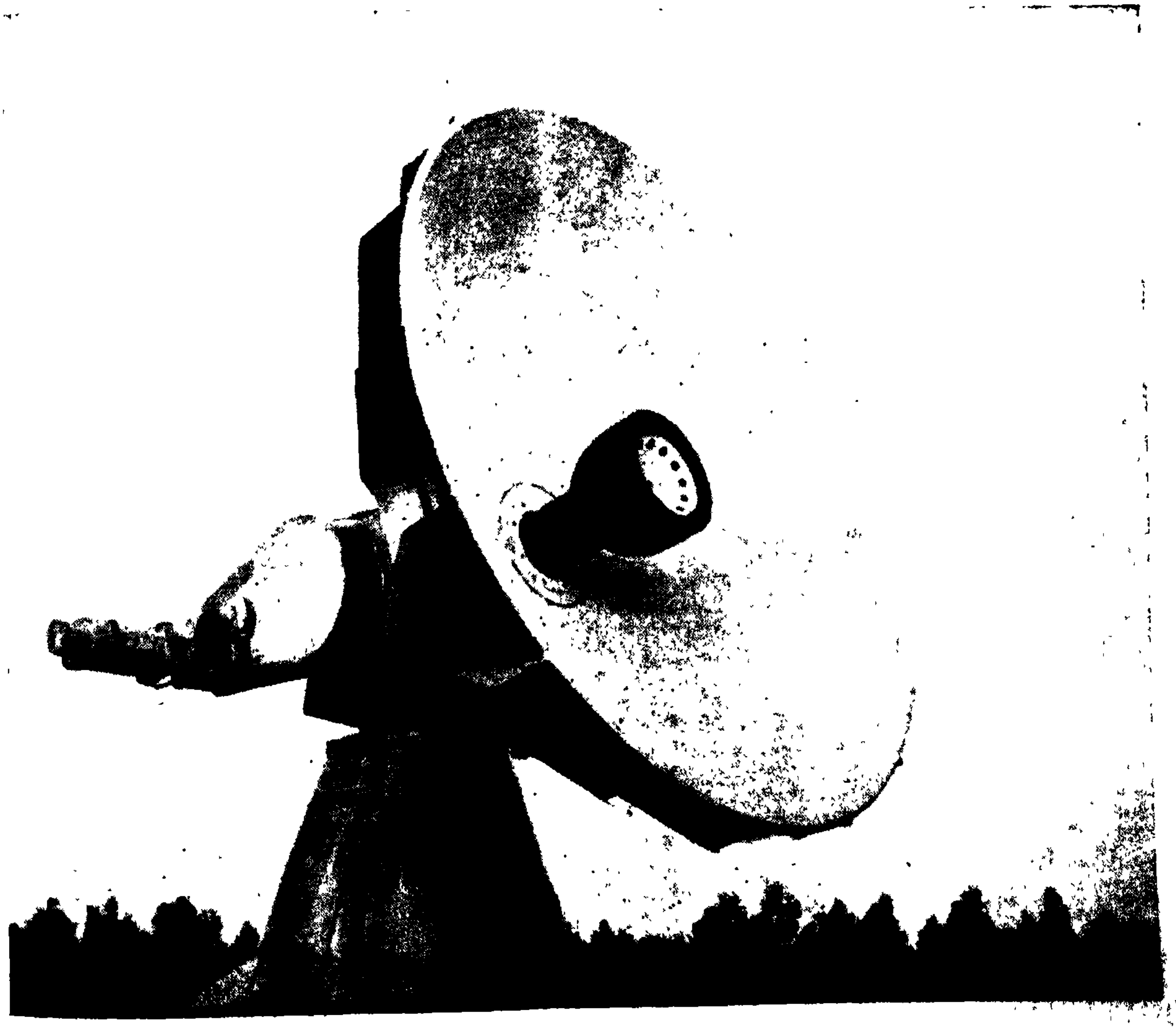
Soviet Help

He emphatically added, "Satellites don't do anything on their own. It is the human beings who are involved in the programme who really contribute He said the space programme was a hybrid system, partly space and partly terrestrial. Asked why Aryabhata had been launched and SEO was now being launched using Soviet rockets, Prof. Dhawan replied that India was fast acquiring launch capability but even before that India accepted the Soviet offer to launch India's first satellite free of cost. When negotiations were proceeding on the launching of Aryabhata, the then Chairman of the USSR Academy of Sciences, the late Prof. Keldysh promised an additional launch, also free of cost, in case the first one failed. However, even though Aryabhata was successful, the ISRO scientists approached the Soviet Union for a second free launch for SEO which was then at a conceptual stage. The Soviet scientists gladly signed an agreement on April 22,1975 for the launching of SEO from a Soviet cosmodrome. The USA was not prepared to launch Indian satellites free.

Prof. Dhawan pointed out that it would cost the Soviet Union at least 10 million dollars for a launching. To a question what the pay off was in this regard for the Soviet Union and for India, he said it was goodwill and togetherness in space that resulted from this combined effort. He also pointed out that India had earlier supported the space launchings of the USSR and the USA by telemetry. He said that a peaceful co-operation programme between two countries was in the interests of both.

Murderos Time-Table

Along with the launching of the SEO, the Indian Space Research Organisation is geared to a very tight schedule, which Prof Dhawan described as "a murderous timetable". The immediate item in this schedule is the launching of the Experimental Satellite Launch Vehicle (SLV-3) proposed for mid-1979, which will carry into space a 40 kg. technology satellite called Rohini Satellite-1 (RS-1). The other for the coming items are the development, launch and in-orbit operation of an Ariane Passenger Payload Experiment (APPLE), a 630 kg. geo-stationery



4DPD/79—2

communication satellite, which is expected to be launched next year by the European Space Agency from a launching pad in what was formerly French Guyana, the launching of two Insat-I satellites, multi-purpose geo-stationary spacecraft being built in the USA to Indian specifications and requirements, the launching of a series of Rohini satellites with scientific, technology and application payloads using SLV-3 and ASLV launch vehicles, the launching of a Rohini Sounding Rocket (RH-560) in 1979, the launching of the first Indian Remote Sensing Satellite (IRS) to be launched in 1983-84 and a proto-Insat also at about the same time.

The scientific and technological work relating to these satellite launchings is done in the four major centres of ISRO which have, in the last 15 years, gained considerable complementarity in their roles and have synchronised and coordinated the various segments of the Indian space programme to the minutest detail. The four major centres under the ISRO are the Vikram Sarabhai Space Centre at Thumba near Trivandrum, the ISRO Satellite Centre (ISAC) at Bangalore, the Sriharikota Range (SHAR) off the coast of Andhra Pradesh and the Space Application Centre (SAC) at Ahmedabad. Besides these, the Department of Space supports basic research in space science at Physical Research Laboratory (PRL).

The first and the largest centre set up by ISRO is at Thumba near Trivandrum. Now called the Vikram Sarabhai Space Centre, named after the late Dr. Vikram Sarabhai, the founder of the centre, it has several units, namely the Space Science and Technology Centre (SSTC), Thumba Equatorial Rocket Launching Station (TERLS), the Rocket Fabrication Facility (RFF), Rocket Propellant Plant (RPP), the Propellant Fuel Complex (PFC), and the Fibre Reinforced Plastic Centre (REPLACE). These units are geared to the generation of technologies for launch vehicles primarily and for certain technologies for spacecraft.

The Space Science and Technology Centre is composed of different groups, namely aeronautics, avionics, chemicals and materials, composites, propulsion and systems reliability. These groups share the responsibility for research and development in propulsion systems, rocket hardware, design, on-board and ground electronics and control systems for application in launch vehicles, payloads and spacecraft system and for their test and qualification.

The two principal ongoing activities managed by VSSC are the Satellite Launch Vehicle (SLV) project and the Rohini Sounding Rocket (RSR) programmes. The Thumba centre develops rockets for satellites and for atmospheric research.

VSSC was started in 1962-63 with the setting up of the Thumba Equatorial Rocket Launching Station (TERLS) primarily to conduct experiments in equatorial aeronomy, monsoon meteorology, cosmic rays, astronomy and geodesy. It was converted in February 1968 into a UN-sponsored International Sounding Rocket Range open to various member countries of the United Nations for conducting sounding rocket experiments for investigation of the upper atmosphere. The only condition is that the nations who make use of the facility should share the information so gathered with other nations.

VSSC has facilities in chemical, electronics and rocket launching areas for development, production and testing. These can fulfil most of the needs of t ongoing programmes.

Spectacular SLV-3

The most spectacular work on which VSSC is n concentrating its attention is the SLV-3 rocket. T scientists have grappled with all the complex proble that have arisen in the building up of the rocket a have solved them to their entire satisfaction. "We ha now a rocket bigger than what Britain has and as l as the one only France has, besides the USA and t USSR", said Dr. V. R. Gowarikar, Scientist-in-Char He pointed out that the VSSC had developed ove period of 11 years from 1968 rockets weighing fr 10 kg to 18,000 kg. Japan which started in 1955 to 15 years before it could put a satellite into orbit 1970. Dr. S.C. Gupta Director of a division, saic "We have now a sense of accomplishment althou we had our set-backs and disappointments in the l 11 years in developing a whole range of small a medium-size sounding rockets, from RH-30 weigh 370 kg. to RH-560-B weighing 2250 kg. and to sat lite launchers culminating in SLV-3 weighing 18 to nes".

Without any foreign collaboration or aid, the Ind scientists have solved various problems of design, r ability, precision and testing. "We have developed scientific culture in which man is at the centre." s Dr. Gupta.

Technological Capability

The ISRO scientists have built up a tremend technological capability involving complex tasks a challenges using primarily fresh graduates from Ind universities. The scientists were keen to emphasise t the whole space programme was intended not achieve glamourous tasks but to make available a te nology for development in the country which wo meet not only ISRO needs but also the needs of oth in the fields of industry and science. There have b a number of spin-offs from the space programme VSSC like reinforced plastics, telemetry equipme a number of new chemicals and gyroscopes which n find use in defence systems and have been taken the Hindustan Aeronautics Ltd.

Although the major work relating to SLV-3 d at VSSC, there are various centres and 40 national dustries spread all over the country doing time-bou and quality controlled working relating to sub-system the rocket. The launch vehicle, with four stages S2, S3 and S4 has 44 major sub-systems and modules with 100,000 individually identifiable co ponents. These have to work in unison to launch satellite into orbit. All the sub-systems have to unde a number of environmental tests.

Around 10 per cent of the SLV components is i genous. The foreign component is progressively ting reduced. The scientists at VSSC said that in gu ance systems, controlled systems and solid propell technology, India could be counted along with other advanced country in the world. SLV-3 undergone various tests (10 for the lower stages 20 for the 4th stage) and every part has been prov Referring to the tests, Prof. Dhawan said, "We failures but we had no disasters. We have comp confidence in our young people. They have shown that we have a reasonable chance of success."

If ISRO is able to launch RS-1 successfully into orbit using SLV-3 in the second quarter of this year, India will be joining the small elite group of five nations, the USA, the USSR, Britain, France and China who have put into orbit their own satellites using their own rocket.

Before the satellite is in orbit, the 13 tonnes out of the total 18 tonnes weight of the SLV-3 launch vehicle would burn off. The specific impulse of the energy level of propellants is a very important factor in determining the capability of attaining velocities that will take a satellite into orbit. When the VSSC started its work, the specific impulse of propellants used was only 200 seconds. When the specific impulse is 230 seconds plus, the propellants will have enough energy to take the satellite into orbit. The scientists at VSSC said that India had reached the level of advanced countries in realising the energy level of propellants.

A successful SLV-3 launch would take ISRO to realising bigger vehicles like the Polar Satellite Launch Vehicle (SPLV) which would launch 650-kg. satellites. The scientists of ISRO are confident that they would be able to attain the operational capability for launch vehicles for putting 850-kg. communication satellites into space in the near future.

A number of spin-off benefits and sub centres have developed from the work on sounding rockets and launch vehicles at VSSC : the Integrated Structural Testing Facility, which has achieved a breakthrough in making a honeycomb of aluminium used for making solar panels, the Fibre Reinforced Plastic Division which makes fibre-reinforced plastic motor cases, nozzle and pressure vessels for SLV, the Rocket Propellant Plant, which was established in 1969 and which gave birth to the bigger plant at Sriharikota making solid and liquid propellants and carrying out hazardous tests, the Rocket Fabrication Facility, which produces rocket hardware and SLV sub-systems and renders support to various divisions in non-destructive testing and the calibration of instruments. The Meteorological Laboratory, which is claimed to be the most sophisticated laboratory of its kind in the country, at which the various precision instruments have been developed indigenously, the Precision Instruments Laboratory which is mainly meant for control and guidance equipment and which has the biggest clean room in Asia excepting Japan, and the Telemetry Section has an order worth Rs. 17 lakh for its HAL ISRO Project on flight instruments and telemetry (hipfit) for aircraft testing. The scientist incharge said that each of the six sub-systems that they had made would cost Rs. 6 lakh, if imported. Ninety per cent of them was indigenous.

SHAR—Principal Rocket Centre

The SHAR centre at Sriharikota is India's principal rocket launching and testing centre from where the SLV-3 is proposed to be launched later this year. Besides providing rocket test and launch facilities, SHAR is responsible for managing ISRO's nation-wide tracking network for the operational support for maintaining national satellites and for producing solid propellants for launch vehicles. The various stage motors and sub-systems for SLV-3 have been produced and tested at SHAR and the launch facilities have been got ready.

The stupendous confidence of the scientists working at SHAR is reflected in a saying prominently displayed there : "We are today where our thoughts brought us. We will be tomorrow where our thoughts take us." In SHAR situated in Sriharikota island in the eastern part of Andhra Pradesh, 100 kms, away from Madras, has sprung up in an area of 100 sq. kms. a vast complex with buildings and sheds far removed from each other and a huge housing colony accommodating 1600 employees and a 50-bed hospital. The main divisions are ISRO Range Complex (IREX), Statistic Test and Evaluation Complex (STEC) ISRO Tracking, Telemetry, Command Data Acquisition network (ISTRAC), the Solid Propellant Space Booster Plant (SPROB), SHAR Computer Facilities (SCOF) and Sriharikota Common Facilities (SCF).

The SPROB, a 250 tonne solid propellant plant, has started production in March 1977. The entire plant (Rs. 8 crores investment) has been built by Indian engineers from drawing to commissioning in four years, said Shri P D. Mazumdar, Manager of the Plant. The solid propellants for the first third and fourth stages of SLV-3 are made at SHAR; that for the second stage is made at Thumba. The filling of the propellants into the various stages of the rocket is remote-controlled.

The rockets are tested on the static bed (STEX) by firing and measuring the pressure, temperature and other parametres. Every little control of each stage is groundtested and flight-tested. A mock-up model of SLV-3 is made to test all the mechanical systems.

The scientists pointed out that in sophistication we were far behind the United States and the Soviet Union because we had very poor industrial support whereas in the USA, every little component was made and supplied by industry. In Japan too, industry gave full support. However, one of the scientists emphasised, "In rocket technology India is in no way behind Japan".

This correspondent felt that the young scientists and engineers working in SHAR, one of the most sophisticated projects of the country demanding utmost precision, deserve not only kudos but support and sympathy from the men at the helm in solving the humanitarian problems faced by them living in an isolated area 'far from the madding crowd' and deprived of the attractions of metropolitan or urban life. ☐

Appropriate Technologies For Rural Uplit

Development and Adoption

Anand Sarup
Secretary,
Planning Deptt., Govt. of U.P.

THE MEANING of the term "Appropriate Technology" has been a subject of considerable controversy for a long time. This has happened, however, only because those responsible for individual investment decisions often do not consider the impact of their decision on the environment, the settlement pattern, the urban and rural and inter regional disparities or on the consumption pattern, poverty levels, employment and income distribution.

It is normal for any public or private entrepreneur to consider technological alternatives but usually he does so purely from the point of view of financial profitability of one vis-a-vis another readily available alternative.

Most of the technological research is taking place in the organised large-scale sector in India and abroad. In the highly developed countries from which technologies are being constantly and often blindly borrowed, there is a tendency to substitute capital for labour. Consequently, the portfolio of readily available technologies all over the world has been progressively becoming oriented to capital intensive, labour saving and large scale operations. Unless this process is counteracted, poor countries with high rates of unemployment and under-employment and inadequately developed infrastructure for power transmission, transportation, marketing etc. would experience a progressively higher incidence of income inequalities and social disparities. A few concentrated belts of industrial activity would develop in specially favourable locations where large industrial units of production would cater to the needs of huge hinterlands where the majority of labour force would be subsisting exclusively on agriculture at sub-marginal levels of income.

One of the pre-requisites for achieving the kind of balanced spatial and socio-economic development envisaged in India's National Plan is that every attempt should be made to bring about not only an overall augmentation but also a diversification and dispersal of employment opportunities. This would mean that a large number of small enterprises would have to be encouraged so that the countryside all over the nation would be interspersed with small and cottage enterprises which would, as is happening on a large scale in Japan, provide seasonal or part-time employment to small land holders and landless labourers To realise this objective, it would be necessary take investment decisions after a systematic apprai of technological choices for different size-dimensic of enterprises keeping in view demand, marketi transport costs, resource endowments, employme capital investment parameters etc. In this context t major factors which will have to be taken into con deration are :

(a) that there has been a tremendous expansi of the communication and rural electrific tion in the past few years;

(b) and now because of electrification and infra tructrual expansion, it is increasingly possib to think in terms of small scale technologi which would incorporate some of the late findings in the field of scientific researc and thus produce products which would t competitive not only in prices but also con parable in quality with goods emanatin from large scale manufacturing units.

It is not necessary in all conditions to make a del berate effort to introduce small scale technologies an call these "appropriate" because of their limite dimension. For certain items and in certain situation and places, when presented with a choice, choosing large scale technology may be the only "appropriate" decision. However, as a general proposition, it doe seem reasonable to assume that in a capital-scarce labour-surplus situation requiring balanced develop ment from the point of view of social as well a personal income distribution, choice of capital saving labour intensive and small-scale technologies would b more "appropriate" provided it does not involv waste of real resources or indefinite artificial proppin up of entrepreneurs at the cost of society. In any cas diversification of the rural economy and augmentatio of the income of a very large percentage of rura population is just not possible without thinking o small scale centres of production.

It is often argued that a decision to choose smal scale units of production inherently involves eithe capital subsidies or tax concession or price suppor because the technologies involved are inherently les efficient than large-scale technologies of production

A careful examination of this assumption would, however, show that there is no real basis for such a generalisation because there is no evidence to indicate that such a conclusion is based on a careful and determined effort to choose or evolve small scale technologies which incorporate the fruits of latest scientific research. Most of the time, the concept of "appropriate technology" gets debased because of the tendency to think of it in terms of either the revival of old technologies of production, or the miniaturisation of large-scale technologies.

A reasonable decision on the comparative viability of various technologies involving different scales of production for various products would be possible only if well equipped laboratories and highly trained technical personnel had examined the scope of technological innovation for small scale manufacture and provided data for comparison for various production-situations. This, however, has not happened because the best laboratories as well as the best minds continue to be occupied with enlarging the unit of production and the substitution of labour by capital.

Another major problem in relation to the development and adoption of appropriate technologies relates to the tendency of various organisations concerned with technological innovation to look myopically at technological processes and find solution in isolation of the constraints of capital, management, labour and entrepreneurial skills and marketing. On the other hand in case of large-scale technologies the process of manufacture is invariably considered in the context of a package of constraints and environmental conditions. That is why innovative research for large scale technologies is much more successful.

It is unfortunate that whenever the question of "appropriate technology" is considered, perhaps because of resource constraints, innovative work is looked upon as one time operation. On the other hand, in the case of large scale technologies, R & D is continued all the time and it is assumed as a matter of course that technological processes would go on changing and improving and, therefore, there would inevitably be a certain rate of absolescence. Another major problem in relation to technological research for finding 'Appropriate Technologies' for rural development is the tendency of sponsoring agencies and government departments to assume that viable groups of highly qualified, experienced and well-paid scientific manpower are essential only for working on problems of large-scale manufacture. Even a moment's consideration would show the fallacy inherent in such a simplistic approach. The turth is that since development of small-scale and "appropriate technologies" involves work which runs counter to the current orientation of research, special incentives have to be provided to researchers willing to take up work on them. Moreover, it has to be recognised that the basic intellectual equipment and methodological approach required for developing "appropriate" and small technologies is no different from those required for research in large scale technologies.

Perhaps the most spectacular work in the field of developing and popularising "appropriate technologies" for small scale production has been undertaken by the Planning Research and Action Division (formerly P.R.A.I.) at Lucknow. It has to its credit the development of the processes and prototypes for small-scale crystal sugar manufacture; production of whiteware and other ceramic goods; relatively less expensive small and community scale biogas plants which do not need steel drums for holding gas; cheap water-sealed latrines for rural areas; and kacha-pucca houses for rural poor. It also started work on small-scale cement manufacture but this had to be given up because of insistence on instant results and bureaucratic obstacles in obtaining adequate and appropriately qualified manpower. Presently, it is engaged in work on small-scale processing of Soyabeans, development of Windmills, construction of a bullock driven pump and a number of other areas concerned with rural enterprises. The Planning Research and Action Division has succeeded in doing useful work only because it is committed to technologies for the development and utilisation of local human resources and structurally organised as a multi-disciplinary institution which can attract talent from well-established technical organisations, convert laboratory research into prototypes, test prototypes in the field and demonstrate the practical technical and economic viability of the "appropriate technologies" evolved by putting up Pilot Project operating in real-life conditions. In short, the P.R.A.D. can go from identification of a problem right upto turn key demonstrations for small scale technologies and thus stimulate the work done for large scale technologies by giant enterprises and their R&D associates.

In 1977-78, the U.P. Government took another major step to facilitate the development of "appropriate technologies" by providing a large chunk of money to its Science and Technology Council laying down that it would be used for the development of technologies for Rural Industries. It was already laid down that the funds provided could be used for any of the following tasks, which it was felt constituted integral stages of the work on the development of "appropriate technologies" :

(a) Exploratory diagnostic studies to identify potential problem areas of work;
(b) laboratory-research for solving specifically identified and carefully formulated problems disaggregated in terms of basic scientific disciplines involved;
(c) fabrication of prototypes; and
(d) testing of prototypes under real life conditions.

Some of the problems which have been taken up by U P.'s Council of Science and Technology in collaboration with P.R.A.D., the Appropriate Technology Development Association, the Roorkee Engineering College and others relate to:

(i) manufacture of cementing material from paddy husk;
(ii) small scale spinning of wool;
(iii) development of improved spinning devices for producing cotton yarn to support handloom and powerloom industry;

(iv) development of prototypes for more efficient bullock-carts;'
(v) construction of cheap but comfortable houses for rural poor; and
(vi) improved agricultural implements for small scale agriculture.

From the experience of P.R.A.D. and other institutions engaged in the development and adoption of "appropriate technologies", it has become clear that rapid progress in the desired direction can take place only if institutional arrangements are made which would make the promoters responsible for the whole gamut of related responsibilities starting with the identification of potentials and problems in their marketing, managerial, labour-skill and resource environment and ending up with life-size pilot projects demonstrating the success of the new processes and prototypes advocated for adoption. Nothing short of this comprehensive approach will deliver worthwhile results.

In addition to the encouragement of institution arrangement for assuming these responsibilities, it also essential that measures should be taken to:

(a) promote the recognition that development "appropriate" small scale technologies quires the same quality of expertise a technological support as in the case of lar scale technologies;
(b) create conditions which would provide speci recognition to technologists and therel "legitimise" work on small scale techn logies;
(c) promote systematic exploratory|diagnost research to demarcate areas of applicati and assign inter-se priorities;
(d) create technology clinics with actual users relevant technologies as referees to evalua the results presented by R&D institution and
(e) provide for failure of experimentation. □

Implementation Planning

Uddesh Kohli
Chief (Monitoring and Information)
Planning Commission

PROJECT life cycle is generally divided into three phases :

(i) Formulation or Planning or Pre-implementation or Pre-construction ;

(ii) Implementation or construction or execution ,

(iii) Operation.

In the first phase, the project is conceived, formulated and investment decision is taken with the help of techno-economic analysis embodied in the project feasibility report, after examining various alternatives. After the project approved detailed technical design work is undertaken and the implementation or construction is started thereafter. However, between the investment decision and start of implementation, lies an important stage where complete and detailed planning for the entire implementation effort is to be undertaken so that implementation could be smooth, less problematic and in accordance with the assumptions of time and cost considered at the time of making investment decision. This is the stage *of Implementation Planning* and the quality of implementation ing determines to a great extent, the success in the later stage of construction or execution. During the construction or implementation stage, an effective monitoring system would help in the corrective action being taken whenever deviations occur in order to ensure that the execution goes in accordance with the implementation plan.

The construction or execution phase ends with the commissioning of a project, which is physically located somewhere, after which the project goes in operation phase and generates the output or service. The monitoring of physical projects in the operation stage is necessary to ensure that the project is run efficiently and economically and the output or service is available in accordance with targets which, in turn, are laid in line with the installed capacity or original estimates made at the time the project was sanctioned.

In case of programmes or schemes which are not physical entities, but diffused or spread over a given area or population, there is generally no distinct dividing line between execution and operation. The two phase overlap and the operation of the scheme goes simultaneously with its implementation and the service or benefits underlying of the scheme often get generated even from the moment the execution stage starts.

The monitoring of schemes in implementation stage is also meant to ensure that the implementation plan is achieved by taking corrective action, wherever deviations occur.

Thus, the Implementation Planning and Monitoring are inter-related phases of one continuous cycle which enables the management to control the projects and scheme effectively and achieve the targets and expectations of implementation of projects and schemes.

Components of an Implementation Plan

A comprehensive Implementation Plan (which has sometimes been also termed as management plan, operational plan, plan of action, resources plan or project plan)—would ideally provide a complete blueprint of the entire work effort involved in implementing the project, including the inputs, manpower, resources needed, logistics, etc. Thus essential components of an implementation plan are :

(i) Plan for physical work effort, etc.

(ii) Time Plan

(iii) Input Resources plan :
- — manpower
- — materials
- — construction equipment
- — construction utilities such as power, water, transport, etc.
- — Funds

(iv) Equipment and order plan

(v) Project organisation, responsibilities and systems

(vi) Plan for construction inter-linkages with other projects/activities.

(vii) Plan for project operation —
- — Raw materials supply
- Manpower recruitment and training
- — Utilities supply e.g , water, power, etc. for operation
- — Operation interlinkages
- — project operation organisation and systems

Plan for physical work effort

This involves a complete definition of the work effort involved in construction of a project, covering :
- — Design, engineering, drawings, etc.
- — Land acquisition
- — Civil work—excavation, land development, concreting, structure, buildings, etc.
- — Plant and equipment—procurement and erection
- — Utilities and services—water, power, road, etc.
- — Township
- — Other works
- — Decision making and administrative activities at different stages and levels

In case of a scheme, work could include :
- — Estimation of requirements of staff, implements, supplies etc.
- — Recruitment and posting of staff
- — Surveys, Investigations, Studies, Reports

ports

- Procurement of implements, credit, supplies, materials
- Land Acquisition
- Distribution of Land, implements, supplies credit
- Physical Works on site
- Other work areas
- Decision-making and administrative activities at different levels and stages

What is needed is a clear visualisation and estimation of the work areas involved, including quantities of (wherever measurable), work areas and activities to be undertaken (if possible and feasible, detailed activities to be identified to the last activity or work item which would need to be undertaken), the sequence in which activities would have to be undertaken, their inter dependence and inter-relationship etc. All work and activities which would need to be undertaken, irrespective of the responsibilities for undertaking them, would have to be very clearly and defined at this stage. What will come out of this exercise, would be a detailed logical plan of work, defined as far as practicable, upto the last element of work.

Time Plan

In the next exercise, estimated time required for each area/activity|element of work and for the project as a whole would be determined. As the time estimate for any work to be undertaken would be dependent upon the resources which will be deployed, in the first approximation, a 'normal' assumption is made, namely, what would have been deployed normally when normal constraints of time/resources were to be applied.

After estimating the time needed for each work area and for the project as a whole, the second stage in time planning is scheduling—i.e. deciding the dates when each work area should begin and should finish.

Many techniques for developing a time plan are available. Traditionally, Bar charts have been used in the country for a long time, Bar chart, indicates the start and finish of each major work area on a time scale. It, however, does not show the inter dependencies, does not give the relative criticality of different work areas, nor can it indicate realistically the impact of delay in one work area on the completion of the total project. Flow charts and Line of Balance are some other techniques used by some organisations but these techniques also have limitations. The Network Techniques namely, PERT (Programme Evaluation and Review Technique) or CPM (Critical Path Method), however, do not suffer from the limitations of the other techniques mentioned above, and are new widely gaining acceptance and use for time planting of projects, though for schemes these have not been applied on a bigger scale. Network techniques involve the development of a logical plan of the entire work effort, after identifying all activities to be undertaken to complete a project, their inter-dependence and sequence ; estimation of time to be taken for each activity, total time for the project, time for start and finish of each activity and scheduling. It also help in identifying critical and slack areas of work, degree of slackness and precise impact of any delay in any activity, on the completion of the project.

Implict in any time plan of the complete work ef of a project are some assumptions of the input sources required for undertaking different work ai or activities. In planning for input resources, th assumed requirements have to be explicitly identi and matched with the likely availability in each t period througout the project implementation. For the implicit resource requirement is more than likely availability in any time period it would be realistic to expect the project to get implemented accordance with the time plan and such an implem tation plan will be inherently un-implementat Secondly the resource requirements may have to levelled availability is uniform, rather than fluctuati In such cases working backwards, the time plan n have to be so revised as to match the resource requi ments implicity in the time plan, with the lik availability in each time period, both in terms quantum and pattern.

Thus input resource planning will require :

(i) Identification of such categories of inp such as manpower, materials, constructi equipment, which because of scarcity co straints of pattern of availability, would quire detailed planning and matching w availability.

(ii) Determination of total requirement of ea category for completing the project.

(iii) Breaking the total requirement into peric by-period components, in line with the ti plan formated.

(iv) Making realistic forecasts of likely availa lity and spelling out assumptions und lying these forecasts

(v) Comparing the requirements with availa lity, for each period, both in terms quantum and pattern.

(vi) Reworking the time-plan wherever nec sary, so that the revised requirements mat the availability.

It may be observed that when there are ma categories of resources to be so planned, it is lik that optimum levelling of first resource may lead one time plan, while that of second to another and on. In other words, optimisation of all resources, ea taken individually, may not lead to one time pl In such case, an alternative approach or one compos model considering all variables together could be ad ted.

Once the time plan and the input resources ha been thus integrated, the resultant implementati plan can be termed as realistic or implementab depending upon how realistically the conditions ha been foreseen (with the best available informati experience and judgement used in foreseeing ther Thereafter, it will be only unforeseeable proble which would need to be tackled during the implem tation stage, so as to keep the project 'on course'. fact studies show that a major portion of delays a cost over-runs are caused by problems which wo have been foreseen if a proper, realistic and compl implementation plan had been prepared before t projects were taken up for execution.

Equipment-Order Planning

While major equipment and other items or th composite groups would normally be listed as activit

in the implementation planning as mentioned above, normally each equipment item is not shown in the implementation plan. Separate schedules of equipment and other items to be ordered are drawn and orders placed accordingly. In many projects the purchase action, undertaken by the purchase department, often goes independently of the implementation plan and the two are not in synchronism. Thus even during the initial stage equipment are often ordered out of sequence with the implementation plan or with other items, either too early or too late. As a result some items are supplied much too early and a few items are late, keeping other equipment on site waiting for them.

In order to ensure that the equipment and other items are ordered in sequence and at the right time, the likely dates by which they are required should be taken from the implementation plan and working backwards, after providing for lead time and some time margin for uncertainty (based on past experience) the date when tenders are to be invited, received, analysed and orders are to be placed, should be determined for each equipment item to be purchased. These schedules will form an integral part of the implementation plan, giving a complete logical blueprint for action by the purchase department.

Project Organisation, Responsibilities and Systems

Both for preparing the implementation plan as well as for executing the project in accordance with it, proper project organisation is to be developed the responsibilities for various talks clearly assigned and use of scientific managerial tools and system ensured from the very initial stage of the project immediately after the decision to invest is taken In some cases, some project organisation can be developed even before the investment decision. It is not only the definition and delineation of organisation structure, but also the filling of key positions with adequately skilled persons that will later determine the success of the project implementation and among the key positions, it is the Chief executives who matters the most. If the Chief executive is committed to the implementation of the project within the time and cost estimates, he would help in developing similar commitment at other levels and also ensure that necessary management techniques are used to achieve the objective

If an implementation plan has been prepared in detail, and if network technique has been used, all activities and their inter-relations are known and specific responsibilities for groups of activities can be assigned to different executives, specifically indicating the quantities of work, start and finished times for activities, slack available, input resources to be used, etc. etc. In fact, if the executives who have to implement the plan are involved in its preparation, they will have better commitment to ensure the achievement of various targets for work, time, input resources and cost.

While considering the management systems to be used, it is important to think of the monitoring and management information systems which will be used during the implementation stage. Development of necessary report formats to be used as input and outputs of the system, data processing and storage system, flow and communication systems, so as to meet effectively, precisely, and economically the likely information needs for monitoring, will go a long way in estabishing a proper monitoring system, which will lead to a review and action taking mechanism, so as to ensure a calculated control over the project implementation

Construction Inter-linkages :

It is not enough to concentrate only on the activities involved in the construction of a given project—falling within the direct or indirect control of the project authorities. Most projects have inter linkages with other projects or activities in the same or different sector, which may be under the control of some other agencies or authorities. Either the given project cannot be physically completed or desired benefits from it will not flow unless the inter-related projects or activities are completed at particular points of time. Examples are mining or industry projects linked with power project, bridges linked with roads, irrigation projects linked with agricultural development projects and so on In such cases unless the whole system consisting of all inter-linked projects is planned together, it is likely that some projects may be completed earlier and some later than required. Thus implementation plan of a given project should also indicate the realistic desired completion dates of related projects which would also need to be achieved if the given project is to be completed in time and is to yield the desired benefits It is necessary that while specifying such dates the concerned authorities are consulted so that these dates form part of their own respective implementation plans, and are, thus, likely to be achieved. Apart from ensuring a coordinated implementation of the inter-linked project from the very initial stages, such an approach will bring the related project authorities together who would help each other in timely completion of respective projects, keeping the completion of entire system as the common objectives.

Planning for Project Operation

In many projects, planning for their successful operation has to be undertaken during the project construction. Arrangements for raw materials, recruitment and training of manpower needed for operation, arrangements for utilities and services such as power. railway transportation, water supply etc., needed for the operation of the plant, etc. have to be made well in advance of operation. Most of these activities have to be undertaken while the project is being physically constructed. In such cases, these activities should also be included in the implementation plan of the project. If project networks are drawn, then these activities can be shown on the master control networks. A separate details network can also be drawn for these activities

The organisation system to be developed and managerial tools and techniques to be used in different functional areas of project operation should also be developed well before the start of operation. In other words, a complete blueprint of the organisational plan can be prepared during the project implementation phase itself and necessary managerial action initiated to achieve this.

4 DPD/79-4

Conclusion

It is the degree of detail and the effectiveness of the implementation planning which will later ensure the achievement of the targets of time, cost and benefits laid for the projects. If implementation of a project or a scheme is considered like fighting a war where the broad target is to win, then implementation plan would be like a military operation plan with complete details regarding strategy, fighting units, operations, logistics, and so on. It is the effectiveness of this operational plan which, to a large extent, determines the success or failure in the war. Howsoever big or small the war or any military operation may be, an operational plan is a must which is well understood by all these involved and followed religiously. The operational plan is thus like the means to achieve the ends. Similarly, project implementation plan is like means to achieve the project objectives.

For each project or a scheme, preparation of implementation plan is a must. The degree of details and sophistication can vary depending upon the size, nature and degree of flexibility in completion time of the project and so can the tools and techniques to be used and the time to be taken or cost to be incurred on implementation planning. But if even 0.1 to 0.5 per cent of the cost of the project or scheme is incurred on implementation planning and later monitoring, the expenditure will pay for itself many times in terms of minimising costly delays and cost over-runs.

Darkness is Receding

KHAZANI DEVI, 28, knows no bounds to her joy. She can read a small story now, write her name and tailor her own clothes. She need not beg the non-cooperative conductor to tell it the bus goes to her destination. She quickly reads the name and jumps into the bus. In fact, the three months long adult education course, put her on the road leading to an entirely different world.

Like Khazani Devi there are 29 others who have attended the Adult Education Centre at Dhulkote in Ambala district, of Haryana. The Dhulkote centre was opened in December last under the State Adult Education Programme (SAEP) which was launched in Haryana on Gandhi Jayanti Day. Classes are held in a room belonging to the primary school. The instructor, a young Harijan girl with a J B.T. Diploma, takes keen interest in her 'students', who are well above her age.

For Tapinder Kaur, the instructor, it is a wonderful experience of sharing knowledge with keen and simple people. She loves to teach even 70 year old sarpanch of the village who has showed a desire to learn Hindi Mahinder Kaur, the "Mahila Panch" in her sixties also wants to learn how to write her name in Hindi. Apart from the three R's women at the centre are taught tailoring and other simple crafts like making jute bags, paper flowers and decorative fans. The Education Department provides all the stationery needed like books, charts, slates, pencils and even ink. All teaching material is kept in the class room after study hours. Occasionally, a student may be allowed to take home her book if she wants to study at home. In just 10 weeks, these students have learnt to write their names, addresses and numbers upto 100.

The syllabus has been prescribed by the National Resource Centre and the formal method of starting with the alphabet is no longer in vogue. Adults learn to distinguish Hindi characters from short sentences and words. Every day the instructor spends 1-1/2 hours with them. The adult education class is conducted in an informal way. Students are free to discuss any problem including household ones. So the class-room atmosphere is punctuated by the occasional cry of a breast-fed baby. Nursing mothers sometimes bring their babies along, and they are not discouraged, because the idea is to attract them to these classes. The instructor bears with their difficulties cheerfully. For a class of women students of 15—35 age group, there is a female instructor, while a male instructor is appointed for teaching men. Attendance is never below 50 per cent for both men and women.

Ambala district already has 248 similar centres. As soon as 30 students are enrolled, one centre is opened. A group of 30 centres has a supervisor. The supervisor at Ambala, Kamlesh, is wholly dedicated to her job. She goes round the villages on her bicycle to at least two centres a day on a surprise visit.

Mostly the younger people have formed the backbone of this programme. Miss Rakesh Kapoor, a middle-class teenager from Ambala City, is amongst those who have taken up the challenge of educating children and adults belonging to the Scheduled Castes within the Harijan Basti, near Nahan House, Ambala City. Women at the basti are regular and well in time. Actually they finish their work at home early with a view to attend the class in time.

As a follow-up of the programme the State Government has plans to operate two mobile libraries so that the neoliterates can borrow books and continue their self education and do not relapse into illiteracy. ☐



TOBACCO INDUSTRY IN INDIA

Shakti Pal Kewal
Freelance Journalist

SMOKING FOR pleasure and as a palliative was unknown in ancient India, though the practice of inhaling smoke from aromatic herbs for curing diseases and suppressing mental troubles prevalent. Smoking of tobacco as a habit was introduced into this country by the Portuguese, towards the beginning of the 17th Century A D. Edward Torry, an Englishman who travelled in malwa and Gujarat in India (1616—1619) as Secretary to Thomas Roe mentioned about the production of tobacco in this country. "People sow tobacco in abundance, but know not how to cure and make it strong, as those in the Western India" (West Indies).

The production of the commodity which by virtue of its flavour and smoking qualities had rapidly become the favourite among the common as well as the elite people of India, received a serious setback for some time as the then Indian rulers prohibited smoking of tobacco. The cultivation of the tobacco plant started in Gujarat, Golconda and other places. People took much interest in its cultivation and grew it abundantly. In certain years, they even allowed the crop to suffer by neglect, as there was over-production. J. B. Tavernier, a French Gem Merchant, and F Vincenso Maria who travelled India during 1659 and 1672 made a mention of the large scale production and export of tobacco to other countries.

Early Measures for Improvement

In 1829, experiments were undertaken by the then British Govt. with some Maryland and Virginia seed obtained from America. Steps were taken to gr finer exotic varieties of tobacco suitable for forei market.

The most important tobacco growing districts that time were, Godavari, Krishna, Coimbatore ai Madurai in composite Madras, Rangpur in Beng and Kaira and Ahmedabad in Gujarat.

In 1906 three research stations were establishe one in Bengal for the trial production of Wrapper T bacco imported from Sumatra and two in Bomb for the improvement of Bidi Tobacco. Experiment stations were set up in Madras, Bihar and U.P. f cigar, chewing and hookah tobacco.

Attempts were also made to produce cigar wrapp leaves under shade. The results of the trials we sometimes encouraging, sometimes not, but neve entirely successful. Some of the samples sent to Eng land were exceptionally good and even better tha American tobacco, but generally tobacco, failed t gain wide acceptance. The Chief defect of India tobacco was stated to be in handling, curing and pack ing, in the presence of dust and sand in its being sol and soggy.

By the latter half of the 19th century, five importan centres of production of tobacco had come to be recog nised. They were (i) Nadiad and Petlad in the the Baroda State, (ii) Masulipatnam and Kakinada, (iii Ranpur and Coach Behar in Bengal, (iv) Pusa i Tirhut and (v) Trichy and Dindigul in Madras.

The trials at Pusa (Bihar) received an impetus with the establishment of the Pusa Institute in 1905, particularly under the Howards. An indigenous type 'PUSA 28' suitable for cigarettes, but cured in 'country fashion' was evolved by them. But the long-sought-after breakthrough had been achieved by the Indian Leaf Tobacco Development Company. They started trial-cultivation in Guntur in 1920 and obtained definite results in about 8 years by using scientific techniques.

Earlier in 1897 a Rothanstead Scientist had suggested trials with Virginia tobacco in South. The Royal commission on Agriculture under the Chairmanship of the Marquis of Linlithgow, also recommended "American Tobacco" as one of the crops for introduction in India with further investigations. Cultivation of virginia tobacco in Guntur district of Andhra Pradesh was started in the year 1920 and in about four years large areas were brought under this crop.

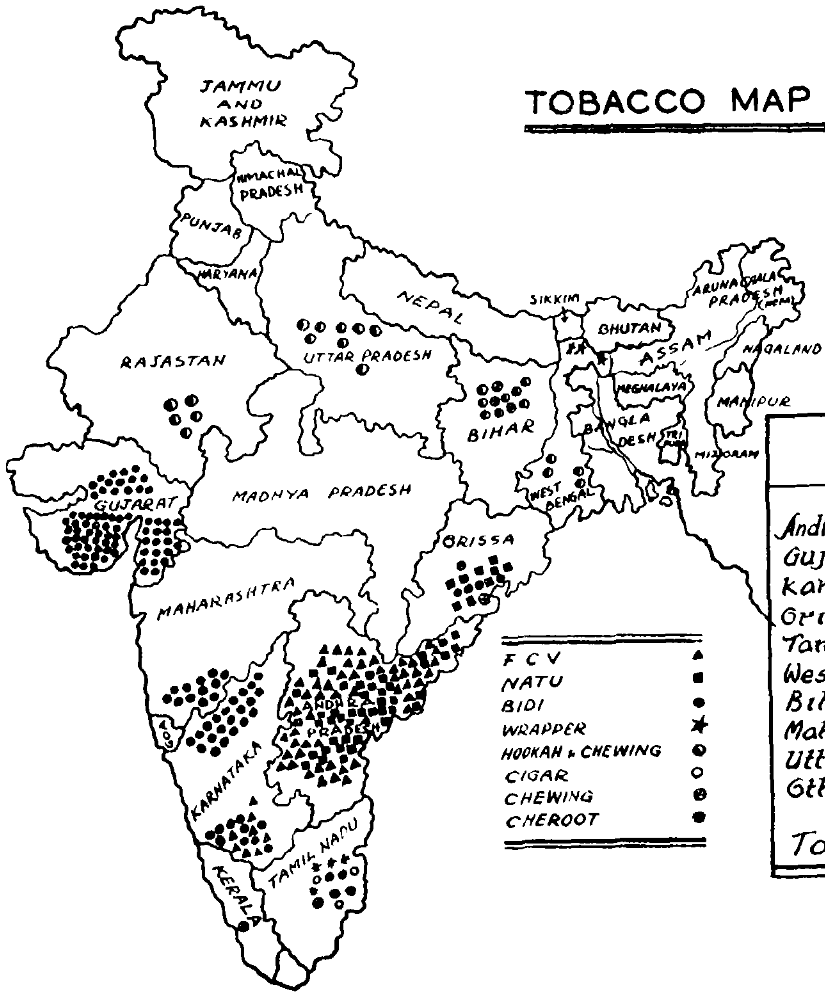
In the history of tobacco cultivation in India, 1929 is a land mark. Flue-cured tobacco was successfully cultivated for the first time. An experimental station was established in Guntur for the exclusive development of this tobacco.

Recognising the commercial value of the crop, the Government of India, established the Indian Central Tobacco Committee in 1945. The Committee set up the Central Tobacco Research Institute, Rajahmundry two years later. The experimental station at Guntur was taken over, and later regional stations were launched at Vedasandur (Tamil Nadu), Pusa (Bihar), Dinhata (West Bengal) and Hunsur (Karnataka). Various exploratory schemes were also started at different parts of the country.

Economic Importance of the Crop

Tobacco is an important commercial crop of our country. It provides employment to about 750 thousand farmers and a little more than 20 lakh persons engaged in curing, grading and redrying, packing and manufacture. The Central Exchequer earns revenue to the extent of Rs. 450 crore from excise duties on unmanufactured and manufactured tobacco. The growers get an estimated farm returns to the tune of about Rs. 200 crore. Tobacco is one of the important agricultural commodities earning precious foreign exchange of about Rs 100 crore (1977-78) per annum. Taking into consideration the growth in the world tobacco exports and our own achievements during the last decade, the forecasts made by expert bodies like FAO and like organisations on world supplies and demands of unmanufactured tobaccos and on the basis of demand projections made by the National Commission on Agricuture and other Organisation connected with the development of tobacco in our country, the planning commission and the government of India have estimated that by about 1978-79 and by 1983-84 the

TOBACCO MAP OF INDIA



STATE	AREA IN 000 Ha	PRODUCTION MILLION Kg
Andhra Pradesh	195.2	181.1
Gujarat	88.5	27.4
Karnataka	39.5	19.7
Orissa	15.4	11.8
Tamilnadu	11.3	10.6
West Bengal	11.9	8.8
Bihar	9.7	7.4
Maharashtra	13.2	6.3
Uttar Pradesh	8.7	6.4
Other States	16.4	12.7
TOTAL	409.2	394.8

foreign exchange earning through exports of unmanufactured tobacco would be in the order of Rs. 110 crore and Rs. 150 crore respectively.

Commercial types of tobacco

Although from botanical point of view there are as many as 50 species of tobacco, only two NICOTIANA TOBACUM and NICOTIANA RUSTICA are of commercial significance. The chief commercial tobacco is Nicotiana Tobacum which occupies the largest part, nearly 90 per cent of total world tobacco acreage. The variety provides the bulk of all leaf material for the cigarette, cigar and cheroot industries. The nicotiana content in this tobacco varies from 0.16 to 11 per cent depending upon the variety.

Since the introduction of Nicotiana Tabacum, the Rustica species have been relegated to the secondary position. The chief difference between the two species lies in the size and shape of leaves and flowers. They also differ in chemical composition as also in flavour. From commercial point of view, Nicotiana Tabaccum is a group of crops each having distinctive characteristics and uses.

Methods of curing leaves vary materially and as such the tobacco fall into the following main classes; (a) Fluecured, (b) fire-cured, (c) Sun-cured and (d) air-cured. Table 1 gives an idea of main commercial types of tobacco grown and its end-uses.

The growing demand for light cigarette tobacco has stimulated the production of FCV tobacco. Dark air-cured or fire-cured types are locally consumed as cheroot, bidi manufacture; hookah, chewing and nicotine extraction.

Area and Production

Tobacco is cultivated in almost all the states in India and constitutes 0.3 per cent of the total cropped area. Andhra Pradesh has the largest cultivable area with over two million acres followed by Guja 0.1 million. Other important tobacco producing sta are Karnataka. Orissa, Bihar, Gujarat, West Bengal a Maharashtra together constituting over 75 per c of total area under tobacco.

The annual production of tobacco is about 40 lakh Kg. of which 1150 lakh Kg. is FCV tobac Table 2 shows area and production of tobacco duri 1970-71 to 1976-77.

Table 3 shows the production centres of differe varieties of tobacco.

Trend in Demand

In a country the level and rate of consumption tobacco is determined principally by the size and e pansion of its adult population. Further, consum tion is influenced by four factors, namely; incom price, taste and technology.

FCV tobacco is consumed as such and other vari ties are used in manufacture of cigarettes, smokir mixtures for pipe and cigarettes, bidi, cigar and ch root, snuff, hookah and agricutural purposes.

There has been a tendency for domestic consump tion to rise faster than exports. During 1974-75 hom consumption was 3010 lakh Kgs. as against export of 750 lakh Kgs.

The table 4 indicates trend in domestic consump tion or raw tobacco.

It will be seen from the above that internal con sumption of tobacco used in the manufacture of cig arette rising at an annual rate of five per cent pe annum while consumption of other types of tobacco excepting bidi tobacco is actually declining. This is mainly due to the shift in the consumption pattern as a result of urbanisation and rise in income. Moreover, tobacco produced in northern light soils of

Table 1

Commercial Types of Tobacco

Class Method of curing	Tobacco types	End use
1. Flue-cured	Broad leaf Virginia.	Chief component in cigarette tobaccos; mild type of tobacco.
2. Fix-cured	Kolenchury Virginia	Strong flavoured tobacco, Used for making snuff, strong cigars and roll, plug pipe tobacco.
3. Sun-cured	Small leaf, Smyrna, Samsun and virginia	Mild type of tobacco; Chief component of so-called Turkish or oriental cigarette tobacco.
4. Air-cured	Murky, Maryland	Light air-cured types used for blending purposes in cigarette and pipe tobacco.
	Dark Brasil-Bahia, (Brazil) certain Havana types, Kentucky Criollo (Ceole)	Filter type of cigar tobacco; heavy leaves.
	Havana seed, Broad-leaf (connecticut) Java.	Binder type of cigar tobacco, medium heavy leaf.
	Sumatra (Deli-type) Havana, cuba	Wrapper type of cigar tobacco.

north India, Andhra Pradesh and Karnataka are being increasingly preferred by the exporters and manufacturers.

India's Export Trade in Tobacco

India's export of manufactured tobacco comprised mostly of flue-cured Virginia, sun-cured Natu Virginia sun-cured, burhy, hookah tobacco, and tobacco for manufacture of bidi and chewing tobacco. During the past decade, India's exports of leaf tobacco registered phenomenal increase from 280 lakh Kgs. valued at Rs. 13 crore in 1966-67 to 740 lakh Kgs. valued at Rs. 93 crore in 1975-76, thereby showing a growth rate of 11.5 per cent in terms of quantity and 24.2 per cent in terms of value. Similarly, India's exports of manufactured tobacco comprising mostly cigarettes has risen from Rs. 0.2 crore in 1967-67 Rs. 5.3 crore in 1975-76. The bulk of the leaf tobacco exports consist of FCV tobacco. India ships this item to nearly 40 countries, the major market being the U.K., U.S.S.R., Japan, Bangladesh, Italy, Senegal and Netherlands.

Cigarette Industry

About 22.7 per cent of the total 4142 lakh Kg. of tobacco produced in India during 1976-77 was of the cigarette type. Of this 683 lakh Kg. was exported and the rest consumed internally

The proportion of filter-tipped cigarettes has been trebled since independence. It increased at a compound rate of about 6 per cent during the 1950s and 1960s. In 1976 the production was 672000 lakh pieces, 13 per cent more than in 1975. This, however, was hardly two per cent of the world production. The per capita production of about 120 cigarettes in India is one of the lowest in the world.

More than 100 brands of cigarettes are manufactured in the country. The types of cigarettes manufactured in India are spread over 35 different unit prices.

The proposition of filter-tipped cigarettes has been going up steadily ; it has gone up from 27 per cent in 1975 to 33 per cent in 1976.

There are ten companies manufacturing cigarettes in the large-scale (private) sector. The ITC Ltd., is the largest having its factories in Monghyer, Calcutta, Bombay, Bangalore and Saharanpur accounting for about 50 per cent of the total cigarette sales in the country.



Kanaka Prabha—An improved variety of f.c.v. tobacco

Table 2

Area and Production of Tobacco

Year	All Tobaccos		Virginia Tobacco	
	Area	Production	Area	Production
	(000 Hectares)	(Lakh Kg)	(000 Hectares)	(Lakh Kg)
1970-71	446.9	3619	159.0	962
1971-72	458.3	4189	173.4	1394
1972-73	444.9	3722	169.2	1201
1973-74	461.5	4621	168.6	1591
1974-75	380.6	3631	119.0	995
1975-76	369.2	3471	117.7	934
1976-77	431.6	4142	142.7	940

While Vazir Sultan Tobacco Co. of Hyderabad accounts for about 25 per cent of market share, the remaining is shared by Golden Tobacco Company, Bombay ; National Tobacco Company, Calcutta ; Godfrey Phillips, Bombay ; D. Macropolo, Bombay ; Crown Tobacco Company and Master Tobacco Company, both of Bombay ; International Tobacco Company, Ghaziabad and Universal Tobacco Company, Hyderabad. Indian cigarette Industry in 1974 had a total paid up capital of more than Rs. 110 crore. Their gross sales exceed Rs. 450 crore. The industry is highly monopolistic. The first six companies control nearly 95 per cent of the market, 80 per cent of it being controlled by the erstwhile foreign owned one such as ITC, Vazir Sultan, Godfrey and D. Macropolo.

The first joint sector cigarette factory at Bari Brahmnan, 18 Kms. south of Jammu has been put up by

Table 3

Production Centres of tobacco varieties

Variety	Production Centres
1. Virginia Tabacco	Andhra Pradesh—Prakasam, Guntur, Krishna, East and Wes Godavari, Nellore, Kurnool and Khammam. Mysore—(Karnataka). Gujarat, Tamilnadu
2. Bidi Tobacco	Gujarat—Charatar Karnataka—Belgaum. Maharashtra—Kolhapur and Sangli.
3. Hookah Tobacco	Bihar—Muzaffarpur, Darbhanga & Purnea. West Bengal—Cooch Behar and Jalpaiguri. Uttar Pradesh—Farukhabad.
4. Chewing and Cigar tobacco	Tamil Nadu—Madurai and Coimbatore West Bengal—Cooch Behar.

the State-owned Jammu and Kashmir Industrial Developmental Corporation and Golden Tobacco Co. Ltd. The factory attained a production level of 15 lakh cigarettes per day.

Bidi Industry

More than 85 per cent of the world's bidi production is accounted for by India. The present production of bidi tobacco in the country is about 1000-1100 lakh Kg. of which 900 to 1000 lakh Kg is used annually in the manufacture of bidis, the actual quantity used during 1976-77 being 998 lakh Kg.

About 46 lakh Kg. of bidi tobacco valued at 3.2 crore and 12 lakh Kg. of manufactured bidis valued at Rs. 30 lakh were exported from India during 1975-76.

Three types of bidi manufacturing systems are in vogue in India namely ; (1) factory (2) contract or thekadari and (3) Charkhata. According to the latest data, there are 2171 bidi factories registered under the Factories Act employing about 1,80,000 workers. Another 28 lakh people are employed in this industry under the other two systems. The total wages paid to the labour employed alone works out to about Rs 110 crore.

The major bidi manufacturers in the country are: Basitiram Naravandas Sarda, Bombay, Mohanlal Hargovind Das, Jabalpur, Bina Biri Works, Purulia.

Bidi Wrappers

Bidis are rolled with special types of tree leaves. Leaves of several trees are used for this purpose. The most widely used is the Tendu leaf. The following leaves are used:

(i) Tendu, Kendu or Timuru (Diospyros melanoxylon) obtained from the forests in Madhya Pradesh, Utter Pradesh and Orissa.
(ii) Apta or Ashitri (Bauhimia recemosa and B. Vahili) from Maharashtra and Tamil Nadu.
(iii) Sal, Shores rebusta in Assam, West Bengal and Bihar.
(iv) Castanopis indica in Assam.
(v) Diospyras tomentosa in Assam.

The wrapper leaves are characterised by their flexible texture, agreeable flavour and resistance decay. The best quality leaves should be soft ar pliable, fairly fully developed, slightly reddish colour and without excess of pupescure on the dorsal side. The total production of wrapper leaves about 3000 lakh Kg. of which 30 lakh Kg. or abo one per cent exported and a foreign exchange of abo Rs. 74 lakh realised. The annual revenue earne by the various State Governments from the wrapp leaves ranges between Rs. two crore and Rs. eigl crore.



Tobacco grading operation in a factory

Cigars and Cheroots are made from uncut tobacco. A Cigar consists of a Centre Core or filler, a middle portion which holds the filler in shape and the outer wrapper which imparts colour, texture and feel. Cigars have a finished head which is closed or tapered. Cheroots have a thick and thin end both of which are open. Cigars are milder, more flavoured and costly.

About 150 lakh kg. of tobacco is consumed annually in India in the manufacture of cigars and cheroots · 15 lakh kg. for cigars and the rest for cheroots and country cheroots.

The present production of cigars and cheroots is estimated to be about 30,0000 lakh pieces. Spencer & Co., Madras, Shri Ambika Tobacco Co; Hyderabad and D. Macropolo Co. Bombay are three large cigar producing units in the country. In addition, there are 300 other Cottage and small-scale units also.

Tamilnadu, Andhra Pradesh, Maharashtra, and West Bengal are the important States manufacturing cigars; and cheroots; Tamilnadu alone accounting for 95 per cent of the total production.

Andhra Pradesh, Tamilnadu and West Bengal are the important states cultivating cigar and cheroot tobaccos. The cigar-wrapper tobacco produced in Cooch-Behar area of West Bengal is well-known.

Hookah Industry

The average annual consumption of hookah tobacco which was about 500 lakh Kg. in the 1950s has come down to 260-280 lakh Kg in the seventies. The decline in the consumption of hookah is attributed to the shift in the consumers' preference.

The hookah tobacco is manufactured by mixing the tobacco with treacle Both Kurwah (strong and pungent) and mitha (sweet and mild) forms of hookah tobacco are made.

Chewing tobacco and Snuff Industry

In Tamil Nadu alone a separate type of tobacco meant to be used exclusively for chewing is grown. In other states tobaccos for hookah, bidi etc are used for chewing purposes also. Important chewing tobacco grown states are Tamil Nadu, Bihar, Uttar Pradesh, West Bengal and Orissa. About 500 lakh Kg. of tobacco is for home consumption under this type.

In 1975-76, about 5 lakh Kg of chewing tobacco valued at Rs. 33 lakh and 2 lakh Kg. of manufactured product valued at Rs. 13 lakh were exported from India.

The more important types of chewing tobacco are Surti, Zarda, Kivam or Paste, Danedar or granules and pills.

Uttar Pradesh and Delhi are the important areas for manufacture of chewing tobacco and account for about 85 per cent of the total manufacture in the country. In Uttar Pradesh, important centres for the manufacture are Varanasi, and Lucknow.

The quantity of tobacco used for snuff making during 1975-76 was 44 lakh kg About 10,500 kg. of snuff valued at Rs. 2.8 lakh was exported from the country during the same year. Important snuff manufacturing States are Tamil Nadu, Punjab, Gujarat and Uttar Pradesh. Madras City is the biggest production Centre. The major consuming centres are located in Tamil Nadu, Kerala, Karnataka, Orissa and West Bengal.

Tobacco waste results from procuring of tobacco like bidi, chewing and hookah and during handling in the case of virginia and other air-cured tobacco. The National Chemical Laboratory has evolved and patented a single process for the manufacture of nicotine sulphate from tobacco waste. The National Research Development Corporation, New Delhi are patent-holders of this process. It is learnt that a factory following the patented process and utilising one tonne of tobacco waste (containing two per cent Nicotine) per day can produce about 45 Kg. of Nicotine Sulphate solution. As per the available information two firms namely M|s. Urokunj Nicotine Industries, Dharmaj, Kaira District, Gujarat State and M|s. Coromandal Tobacco Byproducts, Industrial Estate, Guntur, Andhra Pradesh have undertaken manufacture of Nicotine Sulphate from tobacco as per the process evolved by National Chemical Laboratory. One more firm M/s. Agro-Chemical Industries, Parachur, Prakasam District, Andhra Pradesh, has also been licenced to manufacture nicotine sulphate. The basic date such as utilisation of tobacco waste, production of nicotine and nicotine sulphate, cost of production prices, exports etc. are not available.

Manufacture of Solanesol

Scientific Research has established that Solanesol can be processed from Tobacco waste. Japan is working on the development of new Cardiac medicine using solanesol as pharmaceutical intermediate Solanesol is also reported to be used for synthesising methodically active quinons and vitamin K. analogue. As per the available information three firms i.e. M/s. Bommidala Brothers Ltd., Guntur, A.P. ; Vinod Solverotracts Private Ltd., Vijayawada, A.P. and Synthetic Industrial Chemicals Private Ltd., Kolenchery, Kerala have undertaken manufacture of crude solanesol from tobacco waste and exporting the same to Japan. The reliable data in this aspect is not available.

Tobacco Seed Oil Industry

Tobacco seed contains about 35 per cent of semi drying oil which is nicotine free Since the seed is obtained from FEV tobacco in Andhra Pradesh, the industry is concentrated in that State. Guntur, Ongole, Uppugundur and Vijayawada are important centres.

The annual production of oil is estimated to be about 3,000 tonnes. The entire production now is used by the home industry, though earlier some quantity used to be exported.

Tobacco seed oil which is a semi-drying type is used in the manufacture of soaps, enamels, paints, and varnishes, in making artificial rubber and even for illumination purposes. It can also be used for hydrogenation purposes. However, the Indian production at present is consumed by the soap and paint industry in Bombay, Calcutta, Kanpur and other places.

Research

In view of the dominant role the tobacco industry plays in the national economy, Government of India set up the Indian Central Tobacco Committee in the year 1945 for the improvement and development of all aspects of production and marketing of different types of tobacco. After the abolition of Indian Central Tobacco Committee, the administrative control of the Central

Tobacco Research Institute and its five Regional Research Stations were transferred to the Indian Council of Agricultural Research from October, 1965. The Institute is at present having (1) Division of Agronomy and Soil Science (2) Division of Plant Breeding and Genetics and (3) Division of Biochemistry, Technology, and plant nutrition, (4) Section of Entomology (5) Section of Plant Pathology, (6) Section of Statistics, (7) Section of Seed and Seedlings and (8) Section of Agricultural Engineering, (9) Section of Scientific Co-ordination, (10) Farm Management. Further research works in two main centres and three sub-centres of All India Co-ordinated Research Project on tobacco operating from 1971 are also conducted by the Central Institute. The research programme in various disciplines is aimed at enabling the country to produce more and better tobacco especially the expostable types.

The Institute and its stations are at present having 100 scientists supported by technical, auxillary and administrative staff, well equipped laboratories, library and experimental farms, besides insectary, green-house, glass-house and other facilities for research work.

To meet the present day shift in the quality requirement of FCV tobacco, the principal foreign exchange earner to the country the Institute by following pure-line selection, recombination breeding and mutation breeding has evolved superior varieties suitable to different agroclimatic zones. The varieties released so far for commercial cultivation are Kanakaprabha, Dhanadayi and CTRI Special. Among the mutant derivatives, the performance of VE, has been found to be consistently good and is in the final stage of recommendation. To cater to the needs of varying demands of importing countries the Institute has in its collection a wide spectrum of varieties ranging f low to high nicotine. To overcome the ravages c sed by pests and diseases and to avoid use of p cides and fungicides that carry residue in the cu leaf, the Institute has evolved resistant varieties FCV tobacco specific for powdery mildew (PMRF line 2359 and Line 1494) and for Tobacco Mo Virus (TMVER 2 and 3). Combined resistance both these diseases has been incorporated in Bu tobacco (Burley Momi-2). Resistance to diseases also been incorporated in other commercial types tobacco. For incorporation of resistance against aph and Spodoptera litura F, the species N.

Gossei has been utilized in interspecific hyt disation with 4n. *Tabcum* and lines resistant to in vidual posts and to both have been screened and in advanced stages of testing. Even in other types tobacco which are indigenous and consumed mos within the country, improvement has been effected both yield and quality and improved selections evolv under different types.

The doses and schedules for spraying of approv pesticides have been worked out and recommended the farmers. Except Endosulfan no other chlorinat hydrocarbon pesticide is permitted for use on tobacc It has been found that neem kernel suspension serv as a good antifeedant against *Spodoptera litura* Fc giving good protection to seedlings in the nurseri This finding enables the farmers to avoid use of haz rdous pesticides and will fit in with the integrated pe control programme. Integrated pests and diseases co trol is being adopted by suitable cultural practices ar crop rotations that are effective in reducing *crobanch* nematodes, black shank etc. and also by Biologic Control of Leaf Eating Caterpillars by mass-breedi and release of the egg-parasites of Telenomus remus.

Objectives assessment of quality by chemical ar physical methods has been standardised and criter laid out for sugars, nicotine, nitrogen chlorides, chem cal quality ratios, filling value, porosity, moistur equilibrium, shatter index etc. Extensive investigatior on the carcinogenic properties of tobacco produce under various agro-climatic conditions, agronomi practices and breeding programme with the objectiv of isolating breeding lines and cultural practices th yield safer and less harmful tobacco are being initiate Methods for detection and estimation or organochlorin organophosphorus and carbonate pesticide residues have been standardised and the work on monitorin the pesticide residues on representative tobacco sample from the market yards and warehouses has been initia ted

An improved design for the barn and an improve curing schedule have been formulated and the farmer are adopting them profitably. Paddy husk as an alter nate, cheeper fuel in the place of coal has been recom mended to farmers for whom the husk is easily avail able. A furnace for use of paddy husk constructed a Rs. 160 has been demonstrated. A Low Profile Barr of 7.2×4.8×3 15 metre dimensions was found to be more economical than the conventional barn, recently by saving Rs. 143/- per charge because of saving in fuel, curing time and labour.

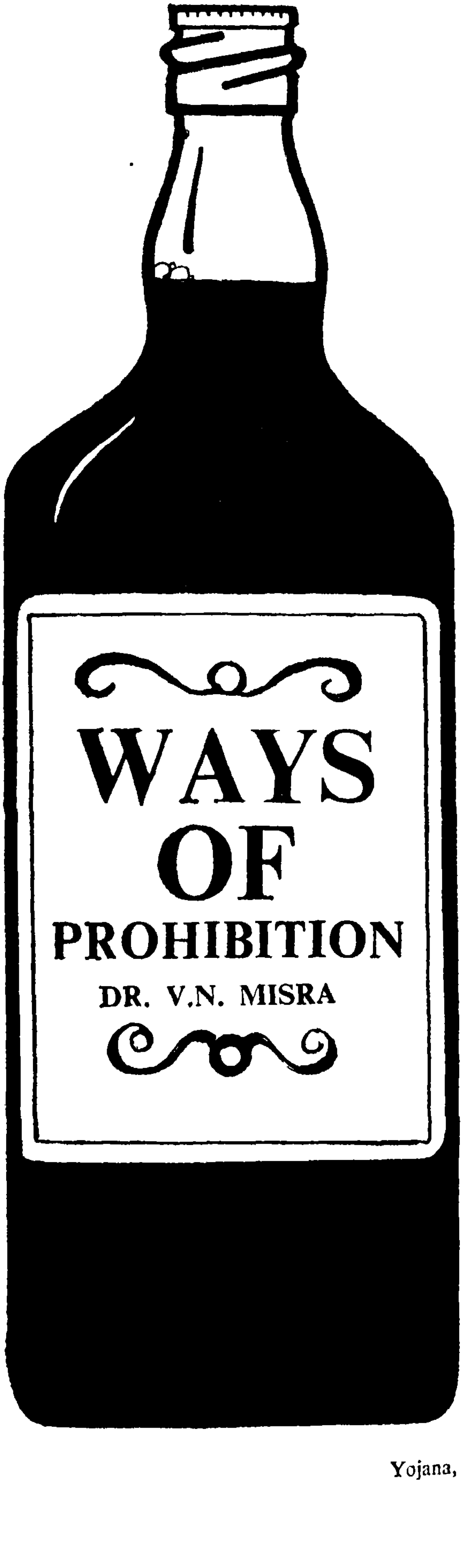
Table 4

Trends in Domestic Consumption

Qty. Lakh kgs.

Variety	1971-72	1972-73	1973-74	1974-75	1975-76
Flue Cured Virginia (FCV) . .	460	430	480	370	430
Other than FCV used in the manufacture of cigarettes and smoking mixtured for pipes and cigarettes . . .	290	260	240	320	300
For manufacture of Bidi . .	790	770	780	810	1050
Others (cigar, cheroot, snuff, hookah, chewing etc). .	1080	880	880	740	760
Agricultural purposes and waste .	410	550	480	480	350
Stalks . . .	350	440	470	290	150
Miscellaneous .	30	4	4	6	4

(continued on Page 29)



WAYS OF PROHIBITION

DR. V.N. MISRA

BY ACCEPTING promotion as a necessary step for achieving higher social good and the individual welfare we come across the question as to what should be the ways and means of its implementation ? The legal aspect of the problem has already been questioned as it unduly restricts personal liberty of a citizen. The social aspect is also not giving an encouragement to the solution of the problem by which we could achieve our goal with any opposition or contradictory thinking on this line. Where the prohibitionists would like to see that the prohibition is not at least absolute. Some laxity in the laws of prohibition would be the real intention of such a group of persons which does not want to come in confrontation with either of the groups

Tracing the early history of the use of intoxicants we find in Vedas the mention of an Aryan drink known as SOMRASA The Ayurveda, mentions of certain herbs which have an intoxicating effect The names like CHARAS, BHANGA, GANJA, APHIMA, have been known in our society since time immemorial. The present form of wine is the result of gradual evolution in the art of distillation. In case of ideological conflicts or the swift process of ideological thinking the man has often been tensionful and worried. In such situations the plea in favour of intoxicants rests on the reason that due to their seducive effect on human mind they provide a sort of relief to a tired human body. But the medical reports regarding the effect of wine on human body have always been discouraging.

Social customs and traditions in some sections of society can also be mentioned which might have accelerated the use of wine. The environmental conditions, the individual and collective feelings of merry-making could have been behind such traditions. The idea of forgetfulness of wordly worries might have tempted some Persian Philosophers to say that the wine is but the love of God. The literature of medieval India is full of poetic imagination and the philosophical and physiological expressions. A few dieties can be named as using some sort of intoxicant a religious colour. The modern club-culture has left no stone unturned to propagate the use of intoxicants. A large number of varieties of intoxicants has appeared on the scene. It is a matter of surprise that all sections of the society, despite all such propagations have not accepted the validity of intoxication on any ground. Even a regular drinker, from the very core of his heart, would always advise others to abhore it. Hence the idea of prohibition at the level of social reformers and the great addicts is proved beyond any reasonable doubt. Even an occasional use of intoxicants will not be advised by any section.

The only question which remains unanswered before us is that as to why the people do not stop doing the things which they feel to be worth stopping. If we go a little deep in its philosophical thinking we will find that the vices and virtues move hand in hand in the society. One exists with the other. The only desired thing is that the ratio of vices should not be such which might disturb the balance of society. The total elimination of vices may not be possible but we can definitely mitigate them. Hence the problem before us today is that how can we minimise the use of intoxi-

cants in our society ? As such the valuable suggestion put forth by our top leaders is prohibition. But what about the other intoxicants ? By prohibiting the use of liquor the addicts may shift over to other intoxicants. The recent cut of 100 days in a year announced by Delhi Administration may shift the use of liquor on other days or at least the quota for the dry days could be purchased in advance. There may be many other loopholes. Due to various difficulties and drawbacks in the process of prohibition many countries have failed in bringing a complete prohibition. A similar experience in some states in India has not yielded the desired result. Illegal distillation has always been a great barrier in the path of prohibition.

After all why do we want to prohibit the use of intoxicants ? The simple answer to the question is that it is because of some personal and social goods which we want to achieve. Personal things may be safely left to the individual in a democratic society. There can hardly be any greater insult to a democratic system than snatching away the personal liberty from its citizens. It is only the social good which can be the concern of a democratic government. How a democratic government can bring down the excessive use of intoxicants so that it may not tell upon the health of society ? One may plead that how can we talk of achieving the social good without first implementing the same at the level of each and every individual ? As a matter of fact the problem is a delicate one. But we must know that it is not each and every individual who is desired to be moulded for an ultimate social goal. Social objects desired to be achieved by prohibition can be fulfilled even by allowing the same for certain useful purposes. If the raw human urine can be used for medicinal purposes it may not be prudent to exclude the distilled liquor from the list of medicines.

The dangerous consequence of intoxication have always been referred to as the basic reason of prohibition. It can be not only health hazarduous but may also lead to some wrong doing under the effect. Unfortunately the Indian law in place of prescribing a punishment provides an excuse to escape the punishment. While prescribing general exceptions, the Indian Penal Code under section 85 and 86 specifically mentions certain exceptions provided for the crimes mitted under the influence of intoxicants. These (tions have often provided a good ground for e) even when the real intent to commit an offence ed. Intoxication is an exception even in a case (greatest offence. To quote section 85, 'Nothing offence which is done by a person who at the ti doing it, is by reason of intoxication, incapat knowing the nature of the act, or that he is doing is either wrong or contrary to law ; provided the thing which intoxicated him was administered tc without his knowledge or against his will'.

Section 86 of the Indian Penal Code while se ing knowledge or intent in a particular offence gives due importance to intoxication. On a mer(scure excuse the Indian law has provided an exce of paramount importance. A great deterrant lav the offences if committed under the influence o toxication must be provided to check the wrong c(quences of intoxication. It is better to kill various mies on one front rather than unwisely running . each of them. This has been our experience that influence of intoxication lessens with a fear of s substantial punishment. The disturbing ghost ı be made to run away from the scene rather creating unpleasant scene for the genuine law a ing souls. A deletion of general exceptions ment ed in the aforesaid sections of the Indian Penal C regarding intoxication can do miracles

Restricting the consumption of introxicants at cer times and places must be further tightened. The ex rules must be followed in the right earnest. The hea and creative community development program should be taken up with a greater zeal by the G Adult education and education of uneducated progr: mes must be strenghtened.

If our national leaders have really the intent of undoing the wrong effects of intoxication, they m fight on a right front. They must amend the wr(provisions of law rather than adding new ones. widely acceptable moral sanction will be available them from all sections of society if they can proc(on the right path with a real spirit. □

[Dr. V. N. Mishra is Professor Shivaji College, De

Making people give up their habits with the help of law does not by itself constitute brute force or violence — to stop the sale of liquor by law and there by force the addicts to give up the habits of drinking is not violence.

Gandhiji

Planning for Power

V. Nagaraja Naidu
Lecturer in Commerce,
Autonomous Post Graduate Centre,
Anantapur.

THE IMPORTANCE of electricity in economic development needs no emphasis. Electricity, the most versatile form of energy at the service of mankind today, possesses the greatest advantage in its adaptability and possibility of transmitting across hundreds of kilometers to quench the thirst of a variety of consumers at all times at their door step. Electricity has become very indispensable in these days. It is an economic necessity and no longer a luxury. A nation's progress and economic development can indeed be measured in terms of supply demand and the level of electricity consumption. The power development of industrially advanced countries is spectacular in terms of power generation and percapita consumption, when compared with that of developing countries like India. Inspite of continued upward trend of power generation, most of the advanced countries are crippled by the problem of energy in recent times and are striving to find new resources, to keep the pace of development.

It is in this background and in the context of continuous power shortages in a growing economy like India, there is need for national approach in exploiting and utilising power resources available in an optimum manner.

Institutional Framework

The institutional framework for power development in India, as envisaged by the Electricity Supply Act 1948, constitutes five bodies including the Central Electricity Authority, State Electricity Boards etc The SEBs, which are autonomous corporations, are entrusted with the responsibility of integrated power development with in the State, inter alia, preparatior of plans, execution, maintenance of powet projects, generation and distribution of Electricity The autonomy of SEBs and their functioning with in the policy framework of and control by the respective State governments left the regional and national power grid systems in a conceptual stage, for a very long time A beginning was made to bring the SEBs of a region to make a concerted effort by constituting the Regional load despatch centres very recently in Bangalore under the control of Southern Regional Board. The Regional Boards which represent a form of voluntary collaboration of the various SEBs concerned, possess no legal financial status and their decisions must be implemented through the actions of individual SEBs. Thus, it does not seem to have much impact in creating an organisation for developing potential energy resources. The poor performance of SEBs is reflected in their inability to cope up with the ever increasing demands for power and solve prolonged inter state disputes over natural resources to set right imbalances in power availability and cost, with the result that power targets are revised downward very often

Planning And Progress

Power development during the successive plan periods has been significant with huge outlays on power sector, adding substantially to generation, transmission and distribution capacity. Large amounts of money have been allocated, exceeding even the outlay for agriculture and allied programmes, during the entire planning period so far. Out of the total public sector outlay in each of the Five Year Plans, the investment outlay on power has been gradually increasing from 13·3. per cent to 18.6 per cent. The draft Five Year plan for 1978—83 proposes Rs 15750 crore on power development including rural electrification ; an all time record of 24.57 per cent of the total public sector outlay.

The power production has recorded the highest rate of expansion and emerged as a leading industrial sector of India. The power industry is the largest public sector in terms of investment of productive capital followed by Iron and Steel and Textiles. Power generation ranks next to textiles followed by Iron and steel in the country

Spectacular strides have been made in the growth of installed capacity and power generation over these decades. The total installed capacity including utilities and non-utilities, increased from 2300 MW in 1951 to 24,039 MW, in 1977. At the commencement of the Five Year Plan 1978—83 it stood at about 26,000 MW. The generation of electricity rose from 7513.97 million Kwh, by the end of the Fourth Five Year Plan. By the year 1977-78 the gross power generation too has grown in the same proportion as that of growth in the capacity.

Short Supply of Power

Inspite of the impressive improvement in installed capacity and power generation still our economy is infested with power shortages. Entire world is engulfed in power famine and India too.

The growth of demand for power has always been over-shooting the growth of capacity. There have been restrictions of all kinds, such as cutting off of the supplies during the periods of excess demand and imposition of imitations on the amount of electricity that might be consumed by a customer. There had also been restrictions on new connections, and sometimes even denied. The widdening gap between the available capacity and demand for power has not only imposed restriction on quantity of consumption but also resulted in the deterioration of the quality of supply of power in the country.

The power famine has retarded the economy with disastrous consequences particularly during the last few years. The sluggish growth of the economy has mainly been attributed to the power shortages, which in turn had adversely affected per-capita income. Power shortage and per capita income have close relationship as evident from advanced countries. The interruptions in industrial production and utilisation of full capacities, came in the way of expansion of industrial production and maximum exploitation of available resources. As

was estimated by the power engineers conference held early in 1978 at New Delhi, the short fall in power generation has cost the country Rs. 3,000 crore in terms of industrial production and three million jobs.

Projected Levels

The Government of India in its Draft Five Year Plan 1978—83 estimated the All India consumption of electricity at 128.8 billion units, requiring a generation of 167 billion units by the year 1982-83, and 265.0 billion units by the year 1987-88. This will call for an addition of about 18500 M. W. of generating capacity by the end of 1982-83 and further addition between 20,000 and 25,000 MW of capacity in the Five Year period 1983—88. In other words annually about 4000 MW of power is to be added to achieve the desired capacity by the year 1987-88.

Constant Slipping Back of Power Targets

In spite of the increasing allocation to power sector in the successive plan periods and huge expenditure on additional capacities built up, the physical achievements in additional power generating capacity have been lagging behind the target since the First Five Year Plan. The percentage short-fall was 15.4, 37.1 and 35.8 in the First, Second and Third Plan periods respectively. The Fifth Five Year plan too, it was estimated, would slip back in achieving the desired target by about 25 to 30 per cent.

The continuous increase in the cost of erection of power projects which are capital-intensive in nature, the divergence of the institutions responsible for execution of power projects and the present trend of poor financial performance of many SEBs raise a sense of doubt the extent of achievement in the construction of power projects projected to meet the increasing demand on time. Doubts have also been expressed in many quarters, including the All India Power Engineers Conference, about the possibility of achieving an addition of 4000 MW annual average. The short fall in the achievement of targets coupled with the under-utilization of capacity, which was a little less than 4,000 Kwh/Kw for all India average and huge power losses in transmission and distribution would continue to keep the gap uncovered between the demand for and supply of power impending a disastrous situa unless the centre steps in with a comprehensive for tackling the problem.

The planning for power development in India h far been on the basis of the power needs of diff SEBs in the country. The planning commission ap es and sanctions the schemes brought before it, by keeping in view the financial constraints. Thus emphasis of planning has been on meeting the p requirements of different states in the country, ex ing the recent move for Super Thermal Stations b on the regional demand. This has led to plannir power stations of smaller size than what the techno cal developments in the industry dictate for econor operation. There has been a mushroom growth of mal stations of smaller and medium sizes at the p of consumption, far away from the coal pitheads. the uneconomical power stations in terms of techno and long distance transportation of coal, escalatec cost of power generation and the ultimate price to consumer.

Regional Imbalances

Besides the overall power shortage, the regional balance in terms of self-sufficiency of power needs tention. It is seen that there is wide variance in capita consumption from one State to another. A states are in a position to export power to other St The supply of power by the surplus SEBs to the de States, seems to have to cut through several bar in reaching an agreement, since the SEBs do func under the policy frame work of the respective S Governments, which have different political set up ideology.

The cost and supply price of electricity also sl wide variance from one State to another. The S which are endowned with cheap Hydel power reso es can supply at lower rate than SEBs, which have c or mainly thermal capacity, since the cost of produc differs from one system to another. Thus the imbala es of power availability and the cost difference of po which is a major infrastructural ingredient for econo development, dictate a national policy and appro

Table

Region-wise potential and utilisation of hydel resources in India

Regional	Total Potential		Potential Developed		Potential under Development		Potential Develope plus potential unde development	
	MW. Cont.	Twh	MW. Cont.	Twh	MW. Cont.	Twh	MW. Cont.	Twh
Northern	6438.90	56.40	1092.60	9.57	1232.30	10.79	2324.90	20.:
Western	4301.34	37.68	626.50	5.49	61.50	0.53	688.00	6.(
Southern	4858.20	42.56	1889.00	16.54	916.08	8.02	2005.08	24.:
Eastern	2180.22	19.10	339.00	2.97	222.06	1.95	561.06	4.9
North Eastern	7478.64	65.51	27.00	0.24	55.00	0.48	82.00	0.7
Total	25257.30	221.25	3974.10	34.91	2476.94	21.77	6461.04	56.4

for equitable distribution of resources to promote balanced regional development.

Natural Resources and National Resources

The Federal structure and provincial jurisdiction of States on natural resources lead to regional differences and prejudices and hence the vast potentialities remained untapped. For example, the States could not reach amicable settlement in sharing perennial water resources available in the country. Added to this, the meagre resources for investment left large potentialities of cheap Hydel power unexploited.

As per the Report of the Ministry of Energy, based on the surveys carried out by the erstwhile CW & PC during 1953—59, on specific schemes of the availability of Hydel electric resources in the country, the economically utilisable power potential was assessed at 25.26 million KW continuous, corresponding to an annual energy generation of 221 25 Twh, excluding the seasonal energy generation possible and the potential of small schemes, as shown in Table. Subsequent surveys conducted by some of the State Governments have indicated that the potential may be much higher

Of the known specific resources, the potential developed constitutes 15.73 per cent and potential under development 9.81 per cent bringing the total of potential developed and the potential under development to 25.85 per cent. This accounts for 6461.04 MW continuous, corresponding to an annual generation of 56.48 Twh. Thus still about 74.42 per cent of the potential is yet to be developed and harnessed for power.

The National policy for power seeks to declare "Natural Resources" to be "National Resources" for utilising the same in the larger interests of the country. Such a policy would facilitate in overcoming the interstate disputes, which have been the important cause for delay in optimal development of Hydel resources, many of which continue to run waste. Super Thermal Stations as are now being planned can be located near coal pitheads relieving heavy strain on Railway transport, and reducing the cost of power.

The technological advancement in power industry, unutilised and uneven distribution of Natural resources and the prospects for growth in demand for power necessitate consideration of an organisation at a national level to Plan and operate the power system. The concept of an all-India power system seeks to fulfil an important socio-economic objective, namely harnessing all the power resources in the country, as economically as possible, according to the latest known techniques and to ensure an adequate and reliable power supply to the consumer, wherever the consumer may be situated in the country. Such a system would make it possible to plan systematically the economic utilisation and conservation of natural resources of the country.

The institutional frame work to achieve the above objective may be on the lines of British Electric Power System, with suitable modifications, if necessary, in view of geographical differences and problems. The multifarious institutions in planning and construction of power projects can be brought under onefold and the constant slipping back of power targets can be reversed. The existing power generation facilities can even be transferred to the CEGB, leaving the SEBs with the responsibility of purely distributing electricity in their jurisdiction. The SEBs would be free from the present financial constraints in handling project construction, generation and distribution and thus can reduce the power losses and contribute additional power for consumption, easing the problem of power shortage.

This will also facilitate the liquidation of uneconomical power stations gradually and in planning an optimum balance between Hydel, Thermal and Nuclear power stations, in terms of size, location etc. The Hydel power can be exploited to the maximum, Super thermal stations can be located near coal pit-heads and atomic power stations away from coal fields and Hydel potential. By carefully worked out programme of operating the Hydel, Thermal and Nuclear power stations the working costs could be reduced to minimum. Power can be supplied to various SEBs at a uniform tariff and in turn by the SEBs to different consumers at the consumption end. The regional imbalances in terms of power availability can be minimised, the differences in standard of living in different regions be reduced through balanced regional development which will also help in narrowing down the regional differences and create a sense of oneness among all the regions. ☐

The Tobacco Story

(*Continued from page* 24)

Lipid matters from tobacco wastes exhibited effective sucker controlling properties. Work on extraction and isolation of organic acides, solanesol and nicotine from tobacco wastes is initiated for diversification of the uses of tobacco Improvement of low grades by thermohygrometric treatment and improvement of smoking quality of Natu and flue-cured tobaccos by chemical treatments were achieved.

The Soil Testing Laboratory of the Central Institute is analysing freely the soil and water samples received from the farmers and advising them as to the suitability of the soil for cultivation of tobacco and water for irrigation and, if suitable, the amount of fertilizers to be applied. Pure seed and seedlings of the approved cigarette, Natu, chewing, cigar filler and cigar wrapper varieties are being supplied to the farmers at moderate cost. The latest research findings of rotations, varieties and packages of practices are demonstrated in the farmers fields in district trials and National Demonstration Trials.

Training is being imparted in tobacco cultivation and curing at Rajahmundry and its Regional Stations for the State Extension Staff, scientists and technicians from other countries and also to the recruits of various tobacco companies.

Further with the interest recently evinced by foreign countries, in cigar filler, wrapper and Burley tobacco, research is being streamlined to produce the right types of tobacco with the ultimate object of creating permanent export markets in overseas countries for these types. In other types of tobacco, through indigenous and mostly consumed locally, considerable improvement has been effected both in respect of yield and quality through systematic research satisfying the needs of the growers and consumers.

The developing countries account for only two percent of the total research and development of the world. While they produce only about one per cent of original technological innovations.

It is not merely a question of developing the appropriate technology in laboratories and research institutions. What is really important is the transfer of the technology to small workshops. To scale up the process or the product developed in the laboratory to its commercial exploitation and to follow it up with the provision of consultancy services to the entrepreneur during the nascent stages of commercial production.

Technology For Small And Village Industries

S. K. Ray
Sr. Correspondent, Yojana, Calcutta

THE SCOPE, content and direction of planning has been geared to the attainment of the objective of eradicating poverty and unemployment within the eighties. The new strategy is aimed at restructuring the country's economy to promote an integrated development of the rural areas. The revival of the decadent village and cottage industries and the accelerated growth of the small-scale industries constitutes a principal feature of this changed approach.

With the capacity of the organised industrial sector in absorbing newer entrants to the labour force being only a bare 10 per cent and the potential of the agricultural sector in creating new employment opportunities being limited, even with the universal application of modern agricultural practices, the small and village industries sector has been rightly chosen for the role of creating employment opportunities on a massive scale by exploiting local talents and local raw materials. Its capacity to do so is beyond dispute. According to one estimate, the output of the small industry is nearly three times as compared with the large-scale factories for a given investment, and employment five times for a given production.

The policy of giving a prestigious place to the small and village industries in the future scheme of industrialisation and of placing man at the centre of planning and implementation of projects and schemes has been interpreted in certain circles as one of denying the im-tance of science and technology in the development process. But the facts speak otherwise. That science ai technology has been recognised as an indispensat medium of economic progress is evident from the n: Industrial Policy which says that the development ai application of technology appropriate to our soci economic condition will form an integral part of tl policy. The emphasis is clearly on the adoption of ir proved methods of production and the use of bett machinery and equipment for the small industry.

Bigger Challenge to Scientists

The issue is not technology itself but the natu of technology. The technology will be such to suit the Indian genius and create immediate an substantial employment opportunities at a relative small capital cost, there being a large force of id manpower on the one hand and dearth of capital o the other. Suitable small and simple machines an devices are required to be evolved and applied t increase the productivity of the worker, improve th quality and reduce the cost of the products made b the small and village industries. The need is for diffusion of appropriate technology into the small-scal sector with the research results percolating to the sma workshops. This, in fact, widens the frontiers of scienti fic research and technological innovation and throw up a bigger challenge to the scientists and technologist in the way that they have to tackle technologica problems in fields where not much R&D work has s far been done.

This is not to suggest that technology is yet to make its debut in the small-scale sector. This sector is already producing goods ranging from simple items to technologically sophisticated products. It is manufacturing hundreds of consumer and producer items with a high degree of skill and precision, particularly in the electronics and electrical, chemicals, engineering, leather, hosiery and sports industries. There has been a spectacular progress in diversification too. The small industry now accounts for roughly 35 per cent of the industrial production in the country, worth Rs. 13,000 crore and by the end of the Sixth Five Year Plan the production is likely to go up to Rs. 19,000 crore. In the total manufacturing activity the share of small-scale and village industries is around 50 per cent and they employ nearly 80 per cent of the total working force engaged in the entire manufacturing sector. The fact that this sector is playing an increasingly important role in earning foreign exchange testifies to the competitiveness of its products both in price and quality.

Area of Operation

The small and village industries sector, however, will have to operate now in a vastly expanded area as envisaged in the new Industrial Policy, announced on December 23, 1977, whose main thrust is on the effective promotion of the cottage and small industries widely dispersed in rural areas and small towns". To accord a pre-eminent place to such industries the policy statement unequivocally underlines that whatever can be produced in this sector shall be produced in this sector and the large-scale industry will be curbed to enter into these fields. As a natural corollary, the list of items reserved for the small-scale sector has already been enlarged from 180 to 807 items with the possibility of more and more items being added to the list from time to time. In fact, this sector will meet a substantial part of the increased demand for consumer and simple producer goods. Within the small-scale sector special attention will be given to units in the Tiny Sector whose investment in machinery and equipment does not exceed Rs. one lakh and which are situated in villages and in towns with a population of less than 50,000, according to the 1971 census. This is the sector which has the potential of providing livelihood to millions of households.

If the small and village industries are to fulfil the responsibilities entrusted to them there should not only be a horizontal expansion of the existing production lines but production of more and more new items also. A concerted effort on a much broader footing is called for in the field of R&D work to evolve technologies which will upgrade the traditional skills and put to industrial use local raw materials which have hitherto remained unexploited. Products from traditional methods will not attract rural consumers as their consumption patterns have changed with the entry of the products of the large-scale sector into rural markets.

Transfer of Technology

It is not merely a question of developing the appropriate technology in the laboratories and research institutions. What is equally important is the transfer of the technology to small workshops. The vital part of the entire process is to bridge the communication gap between the laboratory and the workshop, to scale up the process or the product developed in the laboratory for its commercial exploitation and to follow it up with the provision of consultancy services to the entrepreneur during the nascent stages of commercial production. The success of a product or a process evolved in a laboratory will largely depend on the correct translation of the research findings. In other words, the transfer of technology to the entrepreneur should be arranged in a way that will make it a viable proposition for him to undertake commercial production with positive results.

One of the most effective ways of closing the gap between the laboratory and the workshop is to bring the small entrepreneurs and the scientists and technologists to a common platform for an open exchange of ideas. For, many entrepreneurs are not aware of the facilities available with the different R&D organisations in the country nor do the scientists and technologists of these organisation know of the needs and problems of the entrepreneurs. One such get-together was organised in Calcutta by the West Bengal State Level Research & Development Committee in collaboration with the National Research Development Corporation and the National Council of Science Museums from 8 to 11 April this year in which eminent scientists from 22 National Laboratories participated.

State Level Research & Development Committees have been set up in different States under the joint auspices of the Department of Science & Technology and scrutinise specific R&D problems of the small-scale industries and refer them to appropriate technical institutions and laboratories in the country wherever the necessary expertise is available. The industrial extension service of the Small Industries Development Organisation also seeks to provide technical, economic and management consultancy service to small-scale industrialists through a net-work of Small Industries Service Institutes, Branch Institutes, Extension Centres, Training Centres and Production Centres. Then there are the District Industries Centres which are coming up one by one in all the districts in the country to provide under one single roof the entire package of services to the small entrepreneur and the village artisan ranging from research, extension, entrepreneurial training, supply of machinery and equipment, quality control down to marketing assistance. And the National Research Development Corporation, a Government of India enterprise, is there to transfer the technologies developed in the R&D organisations to the entrepreneurs, setting up pilot plants and demonstration units, if necessary, to make the research results of the laboratory suitable for transfer to industry, and thus acting as a bridge between the scientists and the entrepreneur.

Need for Coordinated Approach

What is of paramount importance is to attract as many small entrepreneurs as possible to get into production ventures. According to one view, small entrepreneurs will get over their inhibitions if in all cases of transfer of technology NRDC accepts full responsibility including financial for the success of a technology upto the production level. At the same time, it is necessary to streamline the services of all the developmental agencies operating for the benefit of the small industry to avoid duplication of effort and to evolve a coordinated approach. The working of NRDC, SISIs and DICs is to be so correlated as to offer to the prospective small entrepreneur not only expert advice in setting up a particular industry but also the requisite technological guidance in his venture. It is only by providing a full measure of incentive and support that the latent entrepreneurship in the rural areas can be suitably tapped □

The Tribal face

Smt. Maithily Jagannathan
Editor : Home Science

IT WAS A sunny day. The bright sun light filtered through the sal trees towering above. Below was the leaf-carpeted forest floor. The hills of Purulia district of West Bengal, the home of *Santal, Munda Bhumi, Baura* and other tribals were rugged. Now and then, in the midst of a small cluster of hills, a few goats, or women carrying fire-wood on their heads, striding down the jungle path were seen. The jeep in which we were travelling jumped and stopped near a turning in the jungle. Two sturdy boys of dark faces glustening against the greenery with bows and arrows in their hands emerged from the trees. "We are guarding goats" said the elder boy and added proudly, We and *shikari* (hunters)". We went down the slope and came to *Bhupatipalli*, a cluster of mud walls in a dry field.

The sun blazed on the huts. Men were seen in loin clothes, while women a piece of coarse cloth wrapped around their body. They were short and sturdy. Their bodies and faces looked dried by sun and wind. In the interior of the huts, a few clothes were hung in a corner. There was a basket or two with rice. "The rice is not for eating but for growing seedlings", told an aged women. Some dusty pumpkin vines were seen climbing up broken walls, probably to strengthen the walls.

A haggard young woman, with a baby on her lap was taking gruel.

What else can he eat ?

"Gruel" from "mocca" (maiz) or "gom" (wheat), with some salt or chillies. Something *sag* (spinach). They also eat kendu and mohua flowers and roots like this "gethialoo". It is very bitter and must be cooked for a long time. They showed a black root, hard as a stone.

"The baby is very weak, will you take him to a hospital if he is ill ?"

"We do our own *chikitsa* (treatment). The hospital is six Km. away. We cannot afford to lose a day's wages", said a sturdy looking middle-aged woman.

The Sarul tribe of Bhupatipalli are nomades who have been given some land in an effort to settle them in agriculture.

"Jomin ache, Jol nai, Goru nai", (We have land, but no water or cattle) they said. "We do majoori (field labour) and buy grains from the market. They are very costly." "So are sugar and kerosene oil," said another. "There are no ration shops here," said a third.

Under Food for Work schemes, which are run for eight months in the year, in this drought prone area, they get Re. one and one Kg. of wheat for a day's work. Women take firewood to the market and men sell bark of *sehor phol* 30 n.p. per bark and hand-made ropes at 75 N.P. per twenty foot rope.

How about shikar ?

A sturdy young man showed some trapping nets "with this we can hunt *bagh* (tiger) *banswar* (boar) *bandor* (monkeys), *bhalu* (bear) and *kheda* (rabits)", he said. "But the forest guards harass us. They take away the shikar and put us in jail," resentment ered in his deep set eyes.

"If there were wells and we had some c could make a living from the land", said a gr man whose body was all knotted muscles and vains.

What are your important festivals ? "Mak kranti in Winter, Sarul Puja in Phagun (F March), when we kill cockerels, and eat fres and mohua." On Buddha Purnima, all *adiva* men from hundreds of miles, come to Ayodh We set out at 4 a.m. and climb the hills hunting on the way. At mid-night, we light a big fire, c and hunted animals. There would be drinks an all night long. This is the biggest festival of a of Chotanagpur".

When did the festival start ?

"Baap dadar bohut age (long before our time), "Ayodhya ke Bogaban esechilen" (C come to Ayodhya hills), said an old man firml

Raju, with his wife, "Churu" (daughte "Churki" (sons) lives in a Santal village in the sque Ayodhya hills. Raju is more fortunate brothers, because he has a regular job in the c forest Rest House. From his red eyes and gait, one can guess that the surplus money ke well supplied with liquor.

Raju's wife earns Re. 1/50 a day as a labo 14 years old daughter works at present in the I Mission nearby and gets Rs. 3 per day, a bla a sheet. The Mission gives employment to t rotation.

"Our women work very hard", said Raju, his head. "They are up at 4.00 a.m. to cut pick leaves. They then go to the market fo wood, and getting "majoori". To grind wh walk to Baghmundi six Km. away. Many of only one meal of gruel per day."

What if there is sickness ?

"Matha Buru and Lugu Buru protect us. ache". There is a stone for the jungle deitie worship it with *sindur* and *tel* (verimelion an and kill cockerels." When will you marry daughter ? Raju's blunt features creased in lighter smile. "Why should I ? It is for the come and offer for her. I will get at least or 120, one maund of rice and extra rice jonye" (for liquor) for the entire village."

Who performs the marriage ?

"We do" said Raju. "The boys and girls stand opposite each other. The boy pu (vermission) on the girls forehead. Then the drinks and dances all night long. Next day goes to her in-laws village escorted by three three boys from our village."

There are a number of official and private in the area. Among them is LAMP, a Co Society financed by United Bank of India. LAMP, we climbed up the steep slope of hills. Suddenly dusk fell we were evelo darkness. The jeep stopped. We grouped to the petromax welcoming us to LAMP office

Lively, dark, sharp featured Manek Chat supervisor, working in the area since 1975,

"I am proud that we have been able to break through the wall of centuries and win the confidence of the tribals here", he said. "They are simple and honest and except very little from life, except drinks and festivities. They do not like charity and will starve and go naked rather than ask for food or clothes".

"When I came here, they were completely in the hands of mahajans to whom they would sell a standing crop for Rs. 5 or 10/-. At first the mahajans were very angry and threatened me. But the local folk accepted me. *Era pant pora babu ke vishwas koren* (they trust a person in trousers)", added Manek with a smile.

We now have 1137 members. The monthly turnover from sale of controlled cloth is nearly Rs. 4,000/-.

How do you explain the acute poverty in spite of so many socio-economic schemes are operating here ? With an engaging smile, Manek asked "And how many of us are here to implement those schemes ? I am the only person here for an area inhabiting 96 villages. How can I go from door to door, assess the needs, or prevent unproductive use of loans ?

Poverty is not due to lack of land. Some tribals here have upto 25 acres of land, but it is not much fertile and water is also insufficient. With water and land development suited to these hills, there could be great improvement.

What are the practical problems ?

"Rules for giving credit" he replied promptly. "We give interest free loans for agricultural purposes, but we cannot give short-term loans for consumption purposes which is necessary in scarcity area like this, particularly when it is largely a tribal area. The result is that once again loans are taken from the mahajan and even benefit of development goes to him".

Are you married ?

"Of course not," he replied. "We are 80 km. from the district headquarters and 10 km. from the nearest town Baghumundi. During rains, we are cut off from the outside world. There is no electricity, or transport facility. None but a bachelor can survive under such conditions ?"

The tribals of Purulia district are among the oldest ethnic races of the world. Some like the Sarul hunters near Baghumundi are the only ones of their tribe. Many development schemes started in the district have languished due to lack of men and resources. Buffeted by waves of social and economic change, tribals have retreated to the jungles Chotanagpur. They live on roots, leaves, insects, reptiles and small game, emerging periodically for "mazdoori" (farm labour), patently waiting in the market-place of towns like Purulia, for the "Thekedar" to offer work.

Programmes like food for work, give temporary relief but are really a form of charity, which goes against the tribal ethos and may finally break down their morale.

Tribals are only half of the total population of marginal and small farmers in Purulia, yet they are the hardest hit, because they have to face an abrupt entry from the primitive and self-sufficient world into the modern inter-dependent society. Apart from light irrigation and livestock schemes like those sponsored by DPAP setting up of local industries for making ropes, baskets, pottery, based on local skills are necessary. These centres could also provide education which will help tribals in their daily life and work, so that they can boldly face the harsh glare of modern life ☐

T.V. Recording on Wheels

The Centre for Educational Technology, NCERT, has achieved a break-through in sophisticated technology with the acquisition of a new, made-to-order TV Recording Van. Now the CET has at its disposal complete TV programme production facilities mounted on wheels.

Weighing 12 tonnes and costing Rs. 25 lakh, this TV Recording Van, specially airconditioned to suit tropical conditions, is a self-contained mobile production unit, which can be taken to various locations. Programmes made with this Van will have greater realism and authenticity as against the artificial studio situation. With this Van, real-life situations and setting natural back-drops and genuine people in their natural environments can be recorded. What cannot be brought into the studio can now be put on tape on locations

This Van represents a completely indigenous design and fabrication effort, which is the outcome of very close collaboration between the CET and Bharat Electronics Ltd., Bangalore, specialising in electronics systems design and manufacture.

The TV Recording Van is equipped with three electronic Plumbicon Cameras (complete with the intercommunication systems between the producer, the floor manager and the cameramen), a Video Mixer, a Special Effects Generator, an Audio Mixer(with a large number of microphone channels) and a picture-and-sound monitoring unit. The Van also has a one-inch dual video-tape recording console. The electronic cameras and video-recording equipment have been donated by UNESCO/UNDP. The audio, inter-communications and power system and air-conditioning equipment are entirely indigenous. At the rear end of the Van are installed the rolls of cables sufficiently long for enabling the cameras to be placed at various places within a range of 150 metres. The roof of the Van has been specially designed so that one camera can be placed there too for top-angle shots, as and when necessary.

The TV Recording Van has been already field-tested in and around Bangalore. The Van will be based at the CET Headquarters New Delhi and can be taken to any place for recording. Educational Television scripts specially designed for children and adult education programmes are under preparation, which will be used when the TV Van Production Programme starts in mid-1979. ☐

BOOKS

Agricultural Development

Dynamics of Agricultural Development in India— *Editor Ali Mohammad : Published by Concept Publishing Company, 65F Anandnagar, Delhi-110035; Pages xxviii+209 : Price Rs.* 90; $ 18.

THE COMPILATION is of a dozen articles based on in-depth study of some factors influencing agricultural development in India with an able introduction that traces the history of Indian agriculture and complex problems that beset its growth. It is but too clear that a small volume like this cannot do justice to all the factors—environmental, technological and institutional,—that are responsible for agricultural growth in a vast country like ours with innumerable variations in each one of them. But the thought provoking articles written by experts for the experts can give them the impetus for similar studies in different regions under varying conditions in order to isolate the factors responsible for slow and unequal growth. Truly speaking, effect of some factors like transport facilities for marketing of agricultural produce, land tenure system or education on agricultural development are known in a large measure to persons who can feel the pulse of rural India They have given such impressions the authenticity and accuracy through scientific observation and analytical processes. The comparative importance of various inputs and infrastructures have been weighed carefully but the human factor, which has not been ignored altogether, tends to topple the balance In one of the articles the author is intrigued over the lack of response to H.Y.V although H.Y.V. wheat became a craze in Pun Haryana. Here undoubtedly the human mind does not subject itself to scientific precision pl major role and although the author does not : the reason appears to be the critical mind and cism of the people in rice growing belt as also a bility of the produce qualitywise.

The introduction itself is very informative anc of the statements are revealing. For example, average consumption of fertilizers on all India b stated to be about 15 kg per hectare in 1974-75 pared to 610 kg in Netherlands etc. Can the red in fertilizer prices alone bring the consumption respectable level or the factors responsible for low consumption have to be isolated and tack Again, 'Green Revolution has been limited to th mers who have the resources or access to institu finance. Most small farmers are therefore unto by Green Revolution'—who own more than 7(cent of holdings and 20 per cent of cultivable la less than 2.02 hectares being the size of a holding. again, the larger the operational holding the low the efficiency of the farm'.

Agricultural production without doubt is a fun of many variables. Since the factors have been i ted it should not be impossible with detailed an to find ways to optimum growth. The book will able ardent workers to take the cue and study problems in each region for finding remedies.

J. Chakrat

Business Economics

Econom'c Environment of Business *by M. Adhikary, Sultan Chand & Sons, New Delhi,* 1978, *Pages* 462. *price Rs.* 25/-.

RAPID INDUSTRIALISATION since independence has created an ever increasing demand of properly trained and professionally competent business managers. In direct response to this growing demand for managerial talent a number of institutes and departments of management have been established to impart sophisticated training and instructions in the management sciences to aspiring managers.

Most of the reading material for the course work in such faculties of management was till recently of Western origin since good scholarly and specialised texts based on Indian conditions and produced indigenously were not available. The book under review is an important contribution to the efforts made to fill the gap.

To a great extent, a manager can improve his style of functioning by becoming fully aware of those aspects of his environment that have a direct bearing on his business. In particular he must have a general understanding of the national economic system ur which he has to operate. This book is an attemp provide the conceptual and analytical tools neces to understand the economic situation prevailing in country. (The Section on Theoretical Framewo However, since a lot of political control on busi exist in India the author has rightly tried to incorpo those political factors also that influence the econo environment of business in India. (Section II : Indian Case)

A salient feature of this book is that true to Weberian tradition, the author has presented alter models for understanding the politico-economic vironment of business and left it to the reader to cide for himself the model he would prefer to uti

In the appendix to the book, the author has pre ted vast amount of related data which would be immense help to students in writing their term pap Students of Management doing their course work Indian Universities are likely to find this book to indispensible.

—Rakesh Sha

Problems in South-east Asia

Socio-Economic Development : Problems in South and South-east Asia
Reddy, Published by Popular Prakashan, Bombay, 1978. Pages. xxi+346, **Price** Rs. 80

THE PROBLEMS of South-east Asian Countries are, by and large, common-densely populated, abject poverty, social tensions and wide economic disparities inefficient and corrupt administration, and above all, they are unable to build a development-oriented political ethos. It is high time that the intellectuals of these nations start thinking seriously and lay down priorities to tackle these problems in a manner so as to provide a direction for the policy makers. Some headway was made in 1973 when the Asian Association of Social Scientists founded the Asian Association of Social Science Research Councils The first International Seminar of AASSRC on Inter-Regional Co-operation in South and South-east Asia was convened in January 1975 at Osmania University, Hyderabad The present book is the outcome of the proceedings of the Seminar.

In his Keynote address, Malcolm Adiseshiah rightly pointed out that Asian nations have a 'common background of colonial-cum-feudal past with its tragic accompaniment of economic underdevelopment'. The poverty culture has to be replaced with another culture be it growth, progress, affluence, welfare or sufficiency.

Of the three papers in the first theme—Planning and Plan Implementation—Gautam Mathur's paper deserves more attention. His contention is that the type of research which is being conducted currently in our countries can be easily relegated to archives, for they provide little or no solution to the problems faced by us. Further, such literature is finding place in our text books. What is required is a serious research into this aspect and promote that type of research which can help building up 'literature on the new pattern written in prose and not in the poetry of equations'. He goes on to suggest that Economic Democracy should be established which is based on a moral judgement and not on a scientific one. Introduction of disparity taxes—an actuative instrument for establishing Economic Democracy—would help in reducing effective demand and increasing effective supply.

The second theme comprises ten papers on diverse issues dealing with Urbanisation and Urban Development It is well known that the level of industrialisation determines the level of urbanisation Paper by Gore and Sharma corroborate this, whereas Panditratna has observe that it is the tertiary sector which has led to urbanisation in Sri Lanka. Since South-east Asian countries are not highly industrialised, therefore, even with a marginal introduction of industries in an area will obviously attract more unemployeds than in a similar situation in developed countries. The reviewer feels that it is this aspect which has contributed more towards congestion in urban areas than other variables. Moreover, the impact of the demonstration effect on the rural poor has also played an important role. This calls for adequate research in regional planning, area development, avenues to generate more employment and, above all, how best the basic amenities like housing, sanitation, drinking water, medical facilities etc , can be made available to the masses at large in urban areas. Or else, alternative employment opportunities have to be generated in rural or semi-urban/semi-rural areas to put an end or minimise the migration of population to urban areas. What is needed is a systems approach to regional planning with more growth centres spread widely throughout the area under study This is what Rashmi Mayur states in his paper On the other hand, Alam and Gopi show that there exists a marked disparity in regional development leading to a highly distorted system of hierarchy of settlements. The pluralistic structure of the societies in the region is yet another problem coming in the way of development of these countries. This is the third theme of the Seminar. Rasheeduddin Khan suggests that the geographical boundaries should be redrawn based on the principles of economic viability, socio-cultural homogeneity so as to promote cohesiveness in the country. This would mean further complicating the existing situation, for there will be more intra-communal conflicts. Moreover, the reviewer is sceptical whether such viable entities can be formed when various regional and communal societies are fast becoming cosmopolitan. Ratna Naidu traces the process of communalism and politics in India and Malayasia; Jatiman assesses the extent of plurality of the Indonesian society, and Komai peeps into the Thai society

The fourth theme—Bureaucracy and Political Development—is perhaps the root cause of all the evils in this sub-continent, bacause there has been a lack of commitment on the part of the bureaucrats to implement the policies laid down There is hardly any change in the administartive structure in these countries. Even if there is any, there is a dominant influence of the top bureaucracy on the rest of them. All the papers except that of Pringgodigdo emphasise this point In Indonesia, after all the political turmoil, when the power was vested in the hands of the Executive it resulted in economic regeneration of Indonesia.

All said and done, the Seminar brought out a number of areas which require further research and a fresh approach The Editors of the book should be complimented to bring out all the viewpoints in one volume and throw pointers to future researchers. These efforts should not only be meaningful but also implementable. Lastly, such volumes should be brought out at an early date and widely publicised, so that they are read in time and raise a national debate on some critical issues

C. V. Rao

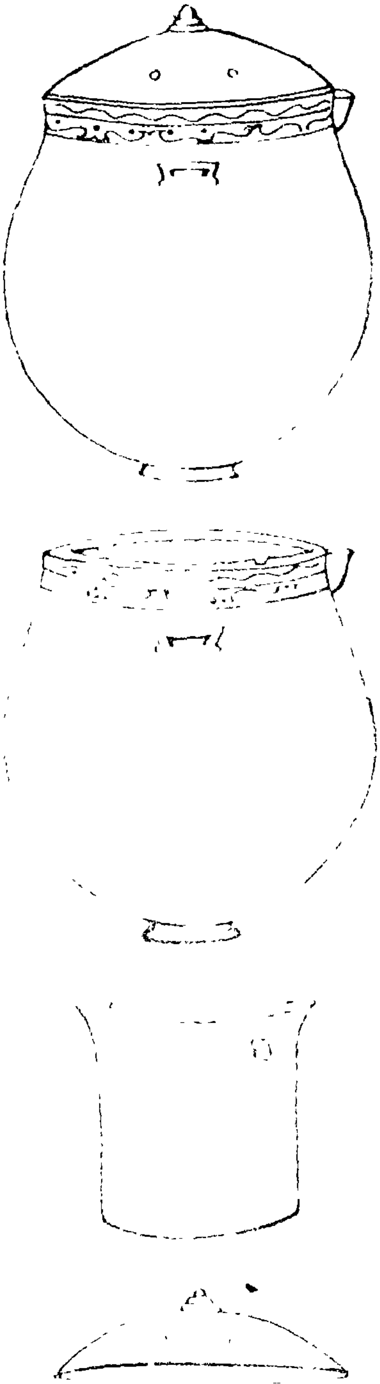
Pay Rs 15 only

Take Home a Fridge

No Further Instalments

WHO SAYS a refrigerator is a luxury ? Every common man can not only dream of but also possess such a household appliance. The Central Village Pottery Institute of the Khadi and Village Industries Commission which has been introducing several special innovations in Village Pottery Industry, has developed a "Janatha Refrigerator" too, popularly known as "Grameen Sheetak" in which vegetables, fruits, eggs etc can be preserved for a week. Flowers too will be fresh for 2-3 days.

This fridge is made out of common clay only. But it is based on purely scientific principle. The Grameen Sheetak consists of a double walled vessel normally of cylindrical shape with slight bulging in the middle as shown in the drawing. There is a spout at the top on the outer vessel through which water can be poured, which remains all around the inner vessel. There is a locking arrangement with 2 clay studs at two places in the bottom of the brim of inner vessel which rests on the brim of outer vessel. Due to this the inner vessel is not pushed up when water is poured around it through the spout. This double vessel is covered with a convex lid having a few holes to allow the moisture to escape. The inner vessel is given a coat of shellac solution for making it impervious (non-porous) while the outer one is a porous one. It is all that happens in this simple device. The outer vessel being porous, water inside gets evaporated through the pores in the outer vessel. The inner vessel being made nonporous, there is no possibility of water evaporating through its walls to the inner container. For evaporation, some heat is needed. This latent heat is taken from the inner vessel in small quantities, thereby the temperature of the inner vessel slowly comes down. Thus a cooling effect is obtained inside the inner vessel. Vegetables, fruits etc. kept inside this inner vessel are not spoiled for about

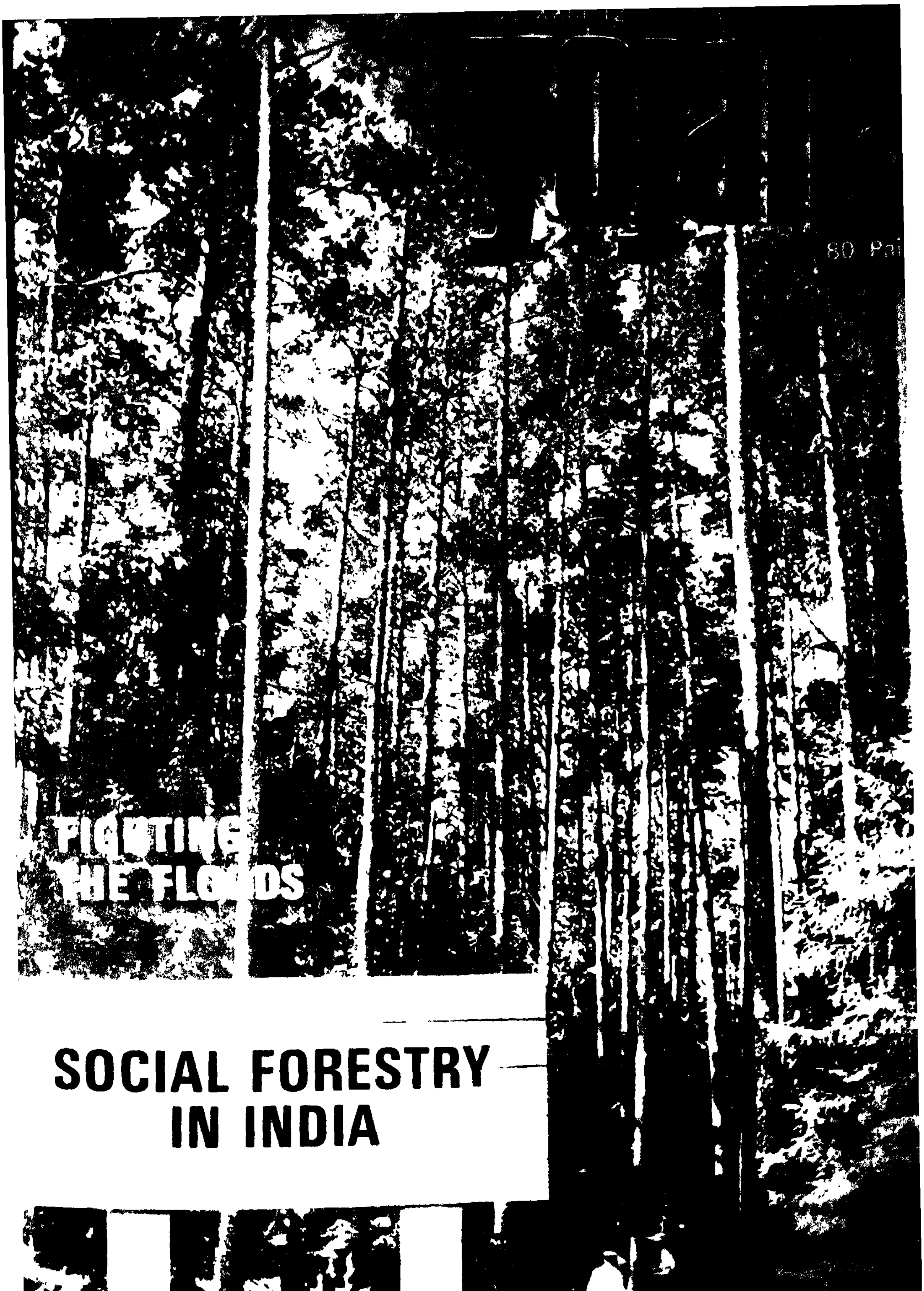


a week. Such a simple device
great advantage to the commo
in the villages as he can bu
vegetables etc. from weekly sh
at cheaper rates and preserve
for a week. The efficiency o
cooling effect depends upor
quality of clay with which the
are made, the size of the pots a
the atmospheric conditions. In
where humidity is very high,
Sheetak may not be as effective
dry places The outer vessel
be as porous and as wide as p
for increasing the rate of evapo
These Sheetaks, if properly h
last for 5 to 10 years, althou
effectiveness of the pot may
gradually This Janatha Fridge
not cost more than Rs. 10/-
village The Central Village P
Institute Khanapur is selling
Rs. 15. Some improvemen
the design of Sheetak are also
undertaken at the Institute.

While presenting to the co
man a cheap but useful devic
preserving his vegetables, curd
this effort of the Central Villag
tery Institute brings a ray of h
the poor potter artisan who fi
difficult to carry on his prof
as the demand for the tradition
and pans is decreasing day b
There are several similar spec
novations evolved at the Kh
Pottery Institute which can be
ed by the potters for earning
wages. Though efforts were m
introduce the benefits of such i
tion in selected places, co
efforts are to be made by the
field staff under the Khadi C
sion and State Boards to di
the production of at least a
of the potters in each village
troducing the special innovati
Grameen Sheetak (Janatha F
Smokeless Choolah etc. □

V. Vas
Pr
Central Village
Institute; Kh

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division Patiala House, New Delhi-110001.



SOCIAL FORESTRY IN INDIA

OUR ACHIEVEMENTS

Export Orders For Engineering Goods

EXPORT orders worth 12 million dollars for engineering products have been secured by the Indian firms during INDEE 79, an exhibition held in Jakarta. Apart from this, enquiries for goods worth 50 million dollars have been received from Indonesia.

The breakup of the firm orders is: textile machinery; $ 3.7 million, auto ancillaries ; $ 1 million, diesel engines and pumps ; $ 1.5 million, machine tools $ 5 million, bright bars $ 1 million, bicycle components $ 2 million and other items including electrical goods and packaging material ; $ 1.2 million.

Items for which further enquiries have been generated include textile machinery, heavy equipment, machine tools and auto ancillaries.

The exhibition was arranged by the Engineering Export Promotion Council.

FRG Major Importer of Indian Carpets

FEDERAL Republic of Germany (FRG) has emerged as the largest importer of Indian carpets. During the first six months of 1978 alone, carpets worth Rs. 268 crore had been exported to the FRG, who considered that the Indian Craftsmanship had raised its standard and quality to a high level.

Together with the increase in qualitative standards of Inian carpets, the number of workers the industry employs, has also gone up from 60,000 in 1970 to about 200,000 people at present.

Price Stability In Foodgrains

INDIA CAN "confidently look forward to another year of ample supplies and stable prices". According to Union Ministry of Agriculture the total stocks of foodgrains—buffer and operational—with the Government at the end of 1978 stood at 17.4 million tonnes.

The total offtake of foodgrains from the public distribution system declined to nearly 10 million tonnes during 1978 from 11.7 million tonnes in the previous year mainly because of easy market availability of foodgrains at reasonable rates. The food situation, therefore, was "marked by plentiful availability of cereals and a remarkable stability in their prices". Moreover, public distribution of foodgrains was maintained at a high level to safeguard the interests of consumers, particularly the vulnerable sections

As a result, the difference in prices in the surplus areas and the deficit areas has narrowed down to the minium.

For the first time since independence, the country not only did not import any foodgrains, but also repaid a major part of the wheat loaned by the Soviet Union. Besides it supplied wheat, wheat flour and rice to friendly countries like Vietnam, Afghanistan, Indonesia and Mauritius.

Commodity Supply Up

THE OVERALL supply of commodities in the tries economy during 1975-76 was high 16 per cent compared to that in 1970-71, acc to a study on "inter-industry transactions in I economy" prepared by the Reserve Bank of I The bank reveals that the supply of intermediat capital goods increased by a slightly higher marg 19 per cent while that of consumer goods show smaller growth of 13 per cent. The balance in supply of commodities for various uses, in general more or less maintained. Imports of consumer g were higher by 82 per cent in 1975-76 while i of intermediate and capital goods were substan lower after expanding rapidly in the intervening pe

On the other hand, exports maintained a rising t throughout the period. Capital goods exports n doubled and those of consumer goods rose by 59 cent. Supplies of other commodities, mostly from unorganised sectors, improved slower than sup from registered manufacturing industries.

Imports constituted 6.7 per cent of the gross do the product in 1975-76 against four to six per cen 1970-71 and the share of exports was 6.5 per against four per cent. While the real increase in g domestic product was 14.5 per cent, commodity ports went up by 15 per cent. However, exports sp ed by 42 per cent.

'Food For Work' Programm In M.P.

FOOD FOR WORK' programme has touched n horizons of success in Madhya Pradesh. Un it, 10,000 development works have been executed, p viding work to four lakh persons including 90,0 persons employed under the Rural Employment Gu rantee Scheme.

The Centre has allotted the State 1.01 lakh tonnes wheat and 24,000 tonnes of rice for carrying on t 'food for work' programme during the current financ year. All of this wheat and more than half of t rice was utilised. The Centre had given anoth 25,000 tonnes of wheat, as per the request of t State Government.

Keltron Turnover 37 p.c.

THE KERALA State Electronic Development Co poration (KELTRON) has achieved a turnover Rs. 5.45 crore in the year which represented a 36 p cent increase over last year.

With most of Keltron's 12 units going into produc tion the turnover for 1979-80 is expected to rise t Rs. 15 crore.

Keltron is setting up a new factory at Aroor, a back ward district in Alleppey for the production of electr nic instruments and control systems for thermal/nuclea power plants and process industries in technical colla boration with **Controle Bailey** of France. □

YOJANA

Volume XXIII Number 12

1 July 1979

10 Asadha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor ; P. C. Roy
Editor : N. N. Chatterjee
Assistant Editors : P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :
AHMEDABAD · Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S K. Ray
HYDERABAD : B N Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai

Cover Design : P. K Sen Gupta
Photographic Officer : K. S Nagaraj

Editorial Office . Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address : Yojana**, New Delhi. **Telephones :** 383655, 387910, **385481 (extensions 402 and 420) Circulation** : Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs.30 Years—Rs 42. Foreign Subscription : One Year—£ 2.70 or $5.00. Two Years—£ 4 50 or $9.00 Three Years—£ 6.30 or $ 12 50 Single Copy — £0.12 or $ 0.25.

Editorial

Law is not the only Answer

SOME OF the miseries in life are natural on which man is yet to establish control and some are made by man. Consumption of alcoholic drinks is a Frankenstein created by man. In the remote past perhaps from the very date of man's arrival on the earth, there has been a ceaseless struggle of man to conquer evil with good, selfish motives with sacrifice, hatred with love. But a man under the influence of alcohol is not in himself. He loses all control on his conscience and power of judgement. Many take shelter in drinking with a wrong idea to escape from realities. Their artificial escape to a dreamland is not an elevation in heaven but a fall in hell.

It is a fact that the use of intoxicating drinks in some form or other has been prevalent in almost every country from the dawn of civilisation. While in West moderate drinking is not being looked upon with any social disfavour, in India drinking has been looked upon as morally degrading.

Before the British days the manufacture and sale of liquor was confined mostly to a few lower classes. With the arrival of the foreign rulers on Indian soil there was a departure from this position. They wanted to exploit Indian people through drink habits for the purpose of bringing more revenue to the exchequer.

People were not satisfied with the policy of the then Government. From time to time there has been protest. Appearance of Gandhiji in Indian political scene gave this movement a definitive shape. He took up the question of prohibition seriously. Prohibition became one important programme for the betterment of living conditions of the people in general.

The Constituent Assembly took a decisive step when it enacted article 47 as a Directive Principle in Part IV of the Constitution.

But law is not the only answer nor a complete safeguard. With the objective of saving the citizens from this evil, drinking shall have to be banished and this will be only possible with the growth of moral, social consciousness and provision of healthy recreation. Education and persuation will be greatly helpful in this connection. Illicit distillation and smuggling of liquor will disappear if there was a nation-wide prohibition of intoxicating drinks.

It needs a strong determination to refuse temptations and accept nobler traits of life. In this campaign the entire human society should participate : men and women, teachers and students, writers and journalists, social workers, political and spiritual leaders It must be pursued, though there may be some varying in the approaches to this problem. There is no doubt that the general mass of our population will benefit by prohibition in many ways financially, physically and ethically and in this great task of educating the human mind no expense, no effort, no sacrifice would be too great. □

LETTERS

Suggestion for Modification

Sir,

Kindly refer to the article 'A Notable Budget' in your issue No. 8 (Vol. XXIII) of 1-5-1979.

The Union Budget for this year could not fulfil the aspirations of the people, who were expecting much more from the Kisan leader. To my mind, the following are some of the points notable in this regard :

1. The budget was expected to give a rural slant. Except, reduction in duty on fertilisers, it did not give any further noteworthy concessions to the rural folk. On the other hand, the increase in duties on petrol and diesel will neutralise the concessions extended in other fields.

2. In a hurry towards larger mobilisation of resources, the budget has hit the middle class people who are already living from hand to mouth.

3. For mobilisation of resources, it seems, the Finance Minister has taken petrol and allied products as a handy one. Now-a-days, it is better for the Government to keep off these products from the tax net. This is because these products are already taxed highly and any further increase will have an overall effect on the economy. Also, the attitude of the OPEC is erratic and nobody can predict when the OPEC will raise the prices of crude oil. So, the best thing is not to touch pertoleum products an increase the duties when the OPEC raises the of crude and that too to the extent OPEC has inc

4. In the above article, a massive rural h programme has been suggested. But today on urban areas are short of accommodation and n rural areas. Instead of solving the urban h problem, it is ridiculous, if the Government att a massive rural housing programme, because m the middle classes in urban areas spend major p of their earnings on shelter, resulting in a m evasion of their incomes.

5. The suggestion for distribution of ke through fair price shops is comendable. Instea current budget has pushed up the price of ke and moreover in many parts of our state it ha underground.

6. The suggestion ragarding rural industrial sion service and building up of skills is notew But then these should be only in the small sca khadi industries, as now-a-days it is undesira have large industrial complexes in rural areas.

C. G. K. N
Hyde

Rural Resources

Sir,

In your 1st March, 1979 issue the article "self replicating Process for Employment Generation" was published. The author suggested that members of the "Rural Resources Corps" should be deployed in selected villages. Indeed it is a laudable suggestion. But we must see the practical side of the problem. Author wrote "Experience has shown that there are many young persons with a sense of idealism and dynamism who would be willing to give some years of their life to rural development, before entering upon their regular career". If that is the case why our villages are not developed so far ? If at least five per cent of the total number of doctors we produce in an year is ready (not on account of coersion but due to their enthusiasm) to work in rural India, by now, thousands, if not lakhs, of doctors must have either already served the villagers or must have been serving now. Then why our villagers do not maintain good health and live in hygienic conditions ? Further those doctors who joined the "Operation rural upliftment" very soon loose their enthusiasm and start thinking of shifting to a town or city. Why ? The reasons are quite obvious. Housing is the first problem. Let us assume that a doctor is able to secure a shelter, sacrificing even the minimum requirements like proper ventilation. Here comes the question of giving drugs to the patients. Many villagers d have shops (of any nature) which sell even o headache tablet like aspro. So the young doctor go to the nearby town. To reach the town he ma to use all sorts of vehicles—Foot, bicycle, boa rail. But our doctors are bubbling with enthusia let us hope he commutes the disance and brin medicines to the village. But the poor vi who live hand to mouth cannot afford to p costly drugs administered to them. If they do n doctor cannot make both ends meet. If he does n the medicine the patient may not survive. Then a aspect of village life that sprinkles cold water boiling enthusiasm is "politics" which needs no ration. The situation is more or less the same w the "young person with a sense of idealism and mism" is human doctor, animal doctor, expert in education, and specialist in agriculture. So, t success of the scheme what is required is su medicines, fertilisers and other things at a cheap and providing adequate communications fa Politics has no place.

Krishn
Kotha
Parlakhimundi (

Flood Control Plan in The Indo-Gangetic Basin

IN the Indo-Gangetic basin, on an average, floods affect an area of 5 million ha. annually including 2.5 million ha. of cropped area and the average of crops lost is nearly worth Rs. 1169 millions. Apart from cattle heads about 12,500 human lives were lost due to floods during 1977-78. In West Bengal alone accepting to the estimates of the State Government, the damage both to public and private property, including industrial installations, is put at Rs. 2,000 crore.

During 1977-78 and until date apart from the expenditure incurred by the State Government, the Central Government had to give advance plan assistance of the order of Rs. 159.51 crore and foodgrains in the form of gratutiaus relief worth Rs. 10 crore.

Considering the enormous damage caused by recurrent floods, it was decided that an integrated action programme for flood control to be implemented over a period of 5 to 7 years should be drawn up for the Indo-Gangetic basin. It was emphasized that the problem of floods should be tackled on a basin-wise basis integrating engineering measures downstream and watershed management (including afforestation and soil conservation) in the upper catchments of the flood prone rivers. Accordingly a Working Group under the chairmanship of Shri S. P. Mukherji, Additional Secretary, Department of Agriculture, was set up with the representatives of the Departments of Irrigation, Finance, Planning Commission, Central Water Commission and Chief Conservators of Forest and Chief Engineers of major concerned States. The Working Group identified eighteen flood prone basins, namely, Sutlej-Beas, Ghaggar, Upper Yamuna (Sahibi), Upper Ganga, Gomti, Ghagra, Rapti, Gandak, Burhi Gandak, Bagmati, Kamla, Kosi, Mahananda, Sone, Punpun, Ajoy and Roopnarain in the Indo-Gangetic basin covering the States of Himachal Pradesh, Punjab, Haryana, Rajasthan, Madhya Pradesh, Uttar Pradesh, West Bengal and Union Territory of Delhi.

The engineering schemes were drawn up by the State Governments and screened by the Sub-Group on engineering works whereas the scheme on watershed management were drawn up by the Sub-Group on Watershed Management (which had Chief Conservators of Forests, Directors of Agriculure/Soil Conservation of concerned States) after examination of soil survey reports, topographic maps, meteorological data and land-use status of the individual flood prone rivers.

Recommended integrated action programme

The report visualises an outlay of Rs. 1727.12 crore for a period of five years. Of this, Rs. 1005.00 crore will be for downstream engineering works (dainage, embankments, town protection, anti-erosion measures, etc.), Rs. 698.62 crore for upstream watershed management (including afforestation, soil conservation and small engineering structures), and Rs. 23.50 crore for modernisation for flood forecasting and warning system and flood plain zoning.

The report envisages protection of 5.5 million hectares of land from floods by engineering measures and treatment of 3.36 million hectares of the catchments of flood prone rivers with afforestation and soil conservation measures in the course of five years. The catchments of Sahibi Nadi (Haryana, Rajasthan and Delhi) and Ajoy (Bihar and West Bengal) which are relatively smaller have been recommended for complete treatment to determine the effectiveness of saturation treatment both by engineering and watershed management measures) on flood control. Complete treatment with afforestation, soil conservation and small engineering structures of the catchments of sixteen rivers/tributaries is foreseen over a period of 20 years.

Flood forecasting and flood plain zoning

The report recognizes the immediate need to mitigate the effect of floods on the one hand and the possibility of fully controlling the floods within the limits of time and resources on the other. Accordingly, the Working Group has recommended precautionary measures of flood forecasting, warning and flood plain zoning and its regulation. These precautionary measures will enable the people to be forewarned about the flood hazard and to take steps well in advance to keep life and property out of the reach of the destructive lethal flood waters. Application of modern scientific techniques, such as, satellite remotssensing imageries, radars, mathematical models and computors have been visualised for identifying vulnerable watersheds which contribute to flood for flood plain zoning, and also for flood warning and flood forecasting.

Other recommendations

Since absolute control of floods is not possible within the time and resources available, the control approach has to be supplemented by flood loss reduction apporach by the following methods :—

(a) In India, since the floods are seasonal, the damageable property and cropping pattern should be so adjusted that property and crops are kept out of the reach of the floods both in time as well as in space as far as possible.

(b) Immediate action has to be taken in demarcating flood plains with different degrees of flood hazards indicating the frequency and

intensity of floods. Thereafter, regulation of human settlements and landed investment should be carried out accordingly. There is an urgent need to have flood plain management in this regard.

(c) In certain vulnerable areas, flood proofing measures like anti-floods design of buildings, raising of sites, ring bunds etc., should be carried out.

(d) There should be an effective and reliable system of flood forecasting and warning and community preparedness for meeting flood situations.

(e) In the flood prone areas, flood fighting arrangements should be built into the administrative system by proper training and briefing of the local officers and by providing adequate rescue and relief materials.

(f) In a country like India with a large population but limited material resources, the protected have to be the protectors also by involving them on a mass scale in afforestation, soil conservation and engineering works including their maintenance and flood patrolling. Their corporation in flood plain zoning and flood fighting is indispensable.

(g) Conservation of the existing forest resources in the Himalayan catchments and all vulnerable forest areas should be put under protection forests.

(h) As regards the agricultural land in the Himalayan catchment, a mass movement of terracing of agricultural fields would be necessary.

2. The following strategy and policy in regard to engineering works for flood control are recommended :—

(i) Review and expeditious completion of ongoing schemes.

(ii) Matching and earmarked provisions of funds in the annual plans of each State for inter-State schemes.

(iii) Stabilising the benefits of existing Schemes and reviewing the drainage schemes on the basis of the criteria circulated by the C.W.C. and the I.S.I.

(iv) Fixing the norms and standards of maintenance of flood control and drainage works on the basis of guidelines approved by the Central Flood Control Board.

(v) New embankment schemes should be taken up with caution after carrying out detailed studies and approved embankment schemes under construction should be completed after carrying out the review.

(vi) Anti-erosion works should be taken up for protection of towns, thickly populated village abadis, railway lines and roads where relocation is not feasible and for protection of portions of embankments benefitting large areas where retirement of the embankment is not feasible.

(vii) All storage reservoir projects should viewed to examine the possibility of ing specific flood storage and op schedules drawn up to provide flood ration to the extent possible.

(viii) The Ganga Flood Control Commission the States of U.P. and Bihar should mediately carry out studies on likely fits of flood moderation by the re projects in Nepal.

(ix) Evaluation of major schemes already pleted in each State an river basin be carried out by the States and report to the CWC/GFCC.

(x) Specific funds should be earmarked i State Plans for scientific collection analysis of hydrological and other data special cells created.

3. Drainage schemes should receive high prio the flood prone river basins

4. All engineering works for flood control s be undertaken against a Master Plan to be pre on a basinwise basis. The State Governments s strengthen their organisations for collection and ply of data to assist the Ganga Flood Control mission in the preparation of the Master Plans.

5. A provision of Rs. 5 crore with 100 per Central grant is recommended for a five year p for strengthening the organisation in the States CWC and the Ganga Flood Control Commissio

6. Funds should be earmarked for all flood cc and drainage schemes at the time of each o Annual Plans.

7. The Central Board of Irrigation and Pow consultation with the State Governments and CWC should frame a programme for applied res on flood control and river training in the next years.

8. The reservoirs indicated in the States of Himachal Pradesh, Haryana, Rajasthan, Ma Pradesh, West Bengal, Bihar and D.V.C. shoulc processed and executed expenditiously. Acquisitio land for Maithon and Panchet Dams of the DVC flood storage should also be expedited.

9. The Department of Power should get the n tiations with the Government of Nepal expedited investigations of Karnali, Pancheshwar, and Rapt

10. The Ganga Flood Control Commission and State Governments of U P. and Bihar should c out studies on likely benefits from the reservoirs the Gandak, Bagmati, Kamla, and Kosi in Nepal.

11. The schemes recommended by the Worl Group will have to be approved as per the proce prescribed by the Planning Commission.

12. In the watershed management of the up catchments, afforestation and grassland developn practices should be supported by small struct works for retarding the velocity of water and det ing silt.

13. Eighteen flood-prone river catchments as i cated above may be covered by watershed man ment.

14. Priority micro-watersheds are to be identified for watershed treatment by the All India Soil and Land use Servey organisation.

15. For watershed treatment a nodal agency to coordinate the work of Forest Department, Agriculture Department and Soil Conservation Wing, with full financial and administrative powers should be established at the State level.

16. The Action Plan would involve covering 3.36 million ha. of flood prone catchment to be treated in five years. This would need creation of about 1300 sub-divisions and recruitment of about 1300 officers, 6500 supervisors and 32,500 field workers

17. Immediate action should be taken to bring all forests in Himalayas under the category of reserved forests and all forest areas whether under Forest Department or outside should be reconnoitred quickly in order to identify the vulnerable area which should be afforded total protection from felling, lopping and grazing.

18. Burning of forest areas should be banned and road construction in the Himalayas and the practice of blasting rocks and then rolling bouders and throwing debris freely down the slope should be regulated

19. There should be complete moratorium on :

(a) Felling of trees, except dead or dying in all forest area in the Himalayas whether under the Forest Department or outside, identified as vulnerable to soil erosion and classified as protected forests.

(b) Deforestation and alienation of forests land for non-forestry purposes

(c) Felling of trees in all areas whether inside Government forests or outside without an approved management plan which enforces adequate provision for regeneration.

(d) All unregulated felling in villages of community forests, civil, 'soyam' and panchayat and 'nistar' forests and on individual holdings.

(e) Unregulated lopping of trees for fodder and fire wood both inside and outside the Government forests.

(f) Unregulated and indiscriminate grazing by free roaming cattle, sheep and goats including grazing of migratory herds belongin to nomads

(g) Fresh breaking of land for Agriculture 'Neuter'/'Benap'.

20. The decision to withdraw forestry from the Concurrent List of the Constitution may be reviewed in view of the devastating effects of landslides upstream, silting and flooding downstream on an interstate basis.

21 There should be a mass movement of terracing of agricultural fields in the hills by making use of Food-for-Work scheme.

22. Animal Husbandry Division should formulate schemes to control the number of useless cattle in Himalayan region and implement controlled or rotational grazing as indicated in the national forest policy.

23. Rupees fifteen crore for strengthening the Central Water Commission's flood forecasting organisations and Rs. 3.5 crore for improving the measurement and forecast of precipitation by the India Meteorological Department. have been recommended. An Interdepartmental Empowered Committee with the representatives of the Planning Commission, Ministries of Finance, Civil Aviation & Tourism and Agriculture & Irrigation, may be constituted to scrutinise and sanction funds for individual items.

24. The Survey of India should be given an amount of Rs. 5 crore for preparing detailed contour maps as the basis for flood plain zoning. The zones will be demarcated by the State Governments to indicate different frequencies and intensities of floods in various zones.

25. The State Governments should be persuaded to get the Model Bill with suitable amendments passed by the State Legislatures on flood plain zoning and follow guidelines for regulation of flood plains as approved by the Central Flood Control Board.

26. Immediate action should be taken to relocate habitations which are in the river beds or within embankments or as encroachments on natural drainage channels. Even if cultivation is unavoidable in danger zones, abadi sites should be outside the river beds or embankments.

27. The Irrigation Act should be amended and implemented rigorously to prohibit the future settlements within the embankments or on river beds and natural drainage channels.

28. Unplanned construction of roads, embankments buildings, housing colonies, without reference to the topographic conditions and natural drainage and flood ways should be avoided. All construction work in flood prone areas should be scrutinised by a flood. Zone Authority. On all existing constructions, cross drainage should be provided.

29. The State Government should utilise the margin money for modernising, refurbishing the flood fighting arrangements including provision for adequate number of boats. Fibre glass boats which are unsinkable could be helpful. Local people should be trained in flood fighting and rescue operations.

30. In hazardous flood prone areas, antidisaster shelters against floods could be provided with the assistance of the State Government, Central Government and voluntary organisations.

31. The elementary methods of flood fighting including community preparedness should be built into the educational programmes in the schools of flood prone areas. Voluntary organisations can be trained and mobilised for flood fighting by the Home Guards and Civil Defence units. Villagers could be encouraged to enrol themselves in flood fighting brigades and trained to do round the clock patrolling of the embankments and interpret signs of breaches, erosion etc., and warn the people.

32. Manuals of Flood Fighting on a district-wise basis should be prepared and plans of evacuations at different flood levels should be drawn up. The Embankment Manuals and Flood Fighting Manuals of the CWC could be used for this purpose.

33. Flood control, flood mitigation and flood fighting cannot be effective without participation and involvement of the masses. The Chinese example of mass campaigns for taming the rivers and for afforestation and soil conservation indicates the possibilities of mass involvement. The Food for work Scheme could be utilised for mass participation in such measures. Mass campaigns of flood control with catchy slongs associated with local names of flood prone rivers or tributaries or denuded hilltops could be started with the help of such teams and other voluntary organisations. Flood

control in the flood prone areas should be built into the planning and development organisations at the grass-root level.

34. For having immediate impact of floods during the next 5 to 6 years on the basis of the integrated programmes identified by the Working Group, it will be necessary that the implementation is taken up as a Centrally assisted scheme with 50% grant and 50% loan to the State Governments. In case of development of private lands, 50% of the cost could be recovered from the owners.

35. In the entire Himalayan region, terracing of agricultural fields should be undertaken under the Food for Work Scheme.

36. The Forest Deparement and the Soil vation Departments in the States will have to siderably strengthened to take over the ci degraded forests in the critical areas and a population in developing community fores forestry and soil conservation in agricultural la additional expenditure incurred for strengthe ganisations should be met entirely by the Government. The Indian Forests Service State Forests Service cadres will have to be e in a massive way and a large number of Fore tension Officers will have to be recruited and to saturate the northern catchments of the floo areas of the Indo-Gangetic basin. □

Model Action Plan For Disaster Preparedness, For Floods

At the State Level :

1. Has a nodal agency for Disaster Management for (a) Disaster Preparedness (b) Disaster Relief and Rehabilitation been set up ? It must be in operation by June 1979 with a Control Room.

2. Has the Coordination Committee on Natural Calamities met in 1979 ? Are the Departments of Irrigation, Flood Control, Public Health, Civil Defence, Home Guards, Food, Transport, Information and Publicity represented in the Committee ? Are the I. G. Police, the local sub-area Commander of the Army, a Senior Air Force Officer from the Air Force formation of the area, Regional Director, India Meteorological Department, Regional Manager of Food Corporation of India, a Senior Officer of the All India Radio, Secretary of the State Social Welfare Board members of the Committee ? Does it have a senior Officer as Member-Secretary ? Is it meeting periodically before monsoon and more frequently and daily during a calamity ?

3. Are important Relief Organisations like the Red Cross and the Ramakrishna Mission also associated with it ?

4. Does it meet at least one month before the onset of the monsoon each year ? Are the District Officers of flood-prone districts asked to attend the meeting or send their problems before the Coordination Committee ?

5. Is there a separate Operations Control Centre ? Is it equipped with a number of telephones, wireless sets ? Is there arrangement to man it round the clock ? Is a roster of duties kept ready to put in operation such a control centre at short notice ?

6. Have all flood prone blocks, talukas, tehsils been identified ?

7. Have steps been taken to see that all such blocks|talukas|tehsils can be reached over telephone| W. T. sets in the event of floods ?

8. Where are the flood warning signals received ? Are they attended to immediately ? Are Radio Stations instructed to issue flood warning in local and intelligible language ? Are Panchayats given receiving sets.

9. Are stores of relief articles and essential cines arranged and verified before monsoon tc up if there are adequate stocks of tents, boats, line, blankets, ropes, bleaching powder, vaccine cholera, anti-typhoid vaccines and anti-snake serum), water purification tablets and insecticid anti-fly and anti-mosquito measures), basic fiel tary engineering equipment, heavy duty pun (for draining) and hand pump sets (for d water) ? Have local army Commanders be of equipment etc. needed in case of floods ?

10. Are routes chalked out in advance for d of relief goods to flood affected districts and s sions or for evacuating the vulnerable populati

11. Has the operation of reservoirs been coor for providing flood cushion ? Have the r Engineers been asked to be in continuous tou District authorities before releasing water li inundate villages.

12. Is it ensured that during flood seaso will be no transfers and that leave vacancies a and nobody should leave post unless a subst available ?

13. Have the local A.I R and T.V. Station tors been requested to broadcast education an mative talks on disaster preparedness for public issued flood warnings round the clock ?

For District and Sub-Division Officers

1. Have you identified the flood prone, block kas, tehsils and villages ?

2. Is there a responsible officer in charge c and anti-disaster operations ? Is he famili the field conditions of the flood-prone area there clear division of responsibility for floo among the officers and staff ?

3. Is there an Operations Control Centr there a roster of duties to man it round the cl

4. Is a log-book maintained to keep dat rise or fall of flood waters at regular intervals rivers in spate ?

5. Is there a Coordination Committee for I Are the district level officers of Health, Irr

P.W.D., Telephones and Police, represented on it? Does it meet at least 3 weeks before the onset of monsoon? Are the S.D.Os. and B.D.Os of flood prone areas invariably asked to attend the meeting? Are Voluntary relief Organisations of repute and standing and the District Branch of Indian Red Cross associated with the Committee?

6. How is the flood warning communicated down the line? Is there adequate arrangement for publicity through mobile units and microphones in the flood prone sub-divisions and blocks to issue the warning?

7. Has the Deputy Controller of Civil Defence received any training to Disaster Preparedness?

8. Has the Deputy Controller of Civil Defence trained the C.D. Wardens in this matter?

9. Have the Home Guards been given any training in disaster preparedness and community preparedness for floods, as well as in rescue/relief/first-aid? How are they kept in readiness for being mobilised at short notice?

10. Are all the flood prone blocks connected with telephones and all flood prone police stations provided with W.T. sets? Can W.T. sets/telephones be provided at still lower levels of administration?

11. Who is responsible for disseminating the flood warning at the village level? Has the village headman and/or the head of the Gram Panchayat been given the responsibility? Do they have transistor sets? If not, can they be provided such sets at Government cost?

12. Has the Officer in charge Relief inspected the district/sub-divisional relief stores after the occurrence of the last floods?

13. In particular, has he checked the stockpile of—

(a) clothings (including children's garments), durries/mates.
(b) tents, tarpaulins, CCI sheets, and other materials for providing temporary shelters.
(c) Boats—both country boats and power-driven ones, life-jackets.
(d) Mobile water tankers, canvas water tanks, drums and jerry cans for transporting drinking water, buckets.
(e) Sand bags for repair of flood protection embankments.
(f) Basic field sanitary engineering equipment.

14. Has the Chief Medical Officer likewise checked up the stock of essential medicines, vaccines, disinfectants, first-aid kits at the district/sub-divisional medical store and kept the primary Health Centres in flood prone areas well supplied with the following:

(1) disinfectants such as bleaching powder, chlorine liquid, water purifying tablets, phenyl/cresol, horrocks bones and chloroscopes (for ensuring quantity of free chlorine) for supplying sale and potable drinking water.
(2) Essential medicines for mobile teams and dispensaries in the Evacuee camps such as anti-diorrhials, anti-biotics, chemotherapeutics and anti-malaria drugs, anti-pyretics, analgesis and anti-allergic drugs, chlorosol, I.V. fluids, paediatric formulations for treatment of gastro internal and respiratory infections in children.
(3) First aid kits containing splints, (including Thomas splints), tournique, dressing and assorted barldages, anti-septic cream, scissors and safety pins.

15. Have flood shelters (schools, community centres etc.) been identified? Are the pucca buildings situated on raised ground beyond the reach of normal level of flood water? What steps have been taken to make people aware of these shelters? Has the list of such shelters been published in the local newspapers and displayed in the Block ? Taluka and Tehsil Offices?

16. Are these shelters easily accessible? Is it contemplated to use the Food for Work Programme for constructing link roads? Do the buildings have adequate space in and around them for storage of fodder and for keeping cattle?

17. Are the shelters provided with sources of drinking water? If not, what action is being taken to locate water sources—tubewells and wells—near the shelters on priority basis?

18. What are the sanitary arrangements for these evacuation camps? Have the local officers in charge of these evacuation camps told to construct the following:

(a) Deep trench latrines.
(b) Temporary urinals with soakage pits.
(c) Incenerators for burning dry refuse

19. Has the District Manager FCI checked up it sufficient stocks of foodgrains are in position in the flood prone areas of the district before the monsoon starts?

20. Has the officer in charge of civil supplies ensured that dealers keep sufficient stocks of essential articles like pulses, edible oil, salt, kerosene, coal, milk powder, baby food, matches, candles and lanterns before the start of flood season?

21. Have the wholesale consumers' cooperative societies been requested to keep in readiness stocks of aforesaid articles at the branch and primaries level?

22. Have suitable sites for probable heli-pads on raised grounds in the flood prone areas been located? Have these been indicated on the district and thana map?

23. Has a meeting of the Transport Operators been called by the Chairman of the Regional Transport Authority to negotiate with the former the placement of private vehicles at reasonable rates for evacuation of flood victims and movement of relief goods?

24. Has the Collector/S.D.O. convened a meeting of the ferry-owners and cooperative societies of fishermen to ascertain the availability of country boats with boatmen at reasonable rates in the event of an emergency? A few country boats may be converted into improvised boat ambulances by providing them with 1-2 stretchers.

25. Have people staying in low lying areas which are inundated in every flood been alerted first about the flood warning? Are you searching for alternative sites which can be allotted to such families? Have attempts been made to persuade such families to shift their dwellings to safer locations?

26 Has the concerned Block identified and kept in readiness a shelf of projects of relief works which can be launched when the flood waters recede?

27 Have the villages that remain water-logged for a long time been identified?

28. Is there a list of people who cannot be provided

with gainful work but may to be fed free at Government cost for some time ? Have the Panchayats been associated in preparing the list of such beneficiaries of gratuitous relief ?

29. Have the people in flood prone villages been trained in relief and rescues ? Have volunteers been grouped for patrolling of embankments round the clock in times of flood warnings and trained to identify vulnerable places when the embankments are likely to give way ?

SOUTH ASIA DISASTER PREPAREDNESS SEMINAR

Proposed Conclusions of the South Asia Disaster Preparedness Seminar.

RECOMMENDATIONS

National

Participant countries need to organize their disaster management office. It should be so located with such establishment and organization for Disaster Preparedness at National and Lower Level that it is effective.

There is need for disaster legislation and a code definition of what it should cover. It should be simple and beneficial.

Involvement of volunteers from within the community for counter-disaster activities should be encouraged to stepulate participation of village people who take interest in protecting their own welfare and working towards their own development.

REGIONAL

4. Regional & Bilateral Co-operation

(a) Cooperation in planning and designing of disaster plans is needed.

(b) Should have more cooperation on afforestation, flood & cyclone warning, communication and flood control, etc.

(c) Cooperation in terms of shelters, huts, boats with OBMS', medicaments, vaccination, rescue operation, etc. is required.

(d) Stockpiling of relief goods should be to regional advantage.

(c) Technical Cooperation in scientific field should be carried out.

(f) Should hold more regional studies and seminars. A regional Seminar could be held once every two years.

(g) Designs and plans of prototype equipment and stores should be made and shared for mutual advantage.

There should be mutual visits to each others institutions and installations.

INTERNATIONAL

A case study should be assigned to a study group which should be formed by each country to prepare a presentation on those disasters received by the respective countries and report to next Semina after two years so that we may benefit from study.

Discussion should be held on mutual assist grammes in general to study the possibilities establish mutual assistance agreements and arrangements.

There is a desirability to establish a regi ordination cell, perhaps in Sri Lanka.

UN including its specilized agencies, League Cross and other voluntary agencies & Ps AIE render more financial and technical assistanc region and spell out the same. US AID should organize training courses and studies region.

The appropriate International Organizations widen the operation of the Landset and Met and extend it to the region to cover the who Satelite receiving stations should be added wher sary.

Areas still not covered by weather radars sh assisted by appropriate international organizati the necessary coverage provided.

There is a need for more seismological sta assist in earthquake prediction research in the Assistance in determining appropriate locatior quired

US AID and UNDRO are requested to dis more technical material and other correspond all countries of the region.

Officials of US AID and UNDRO are requ make periodical visits to region to exchange ide

UNDRO is requested to play more posit and co-ordinate all disaster activities to h region.

16. UNDRO should continue disaster stu all aspects of disaster and emphasize disaster ment education by holding more seminars, co etc.

Donor country disaster assistance should be on humanitarian basis and not for other reasor

Appropriate International Organizations shou regional stock piles of relief goods in areas th maximize quick relief response.

Disaster prevention and preparedness sh emphasized more than relief and funding of tion programmes should be carried out by USAID and World Bank.

There is need for preparing contigency flood protected areas for evacuation of popul case of disastrous breaching of embankments cluding enacting legislation for land use zoni to minimise loss of life and reducing damage cultural economy. This may also include i methods of preserving seed grains against sto floods and protecting farm animals and eq against loss.

Recommendations of the Cyclon Distress Mitigation Committee.

As result of severe cyclonic storms affecting the Indian coast in recent years, the Government of India under the aegis of the Ministry of Irrigation and Power, set up Cyclone Distress Mitigation Committees (CDMC) in several coastal states. The purpose of setting up these committees was to devise adequate measures for minimising the loss of life and damage. The Director General of Meteorology was the Chairman, and senior officers of the Central and State Governments were associated with these Committees

The CDMC for Andhra Pradesh was set up in 1969, where as similar committees for Orissa and West Bengal were established in 1971 and 1974 respectively.

The committees submitted their reports to the respective State Governments. A brief account of the principal recommendations and their present stage of implementation is indicated below :—

(i) *Cyclone Warning Radars* : The main component of the Cyclone Warning system is a network of cyclone warning radars along the east and west coasts of India. These radars have a range of 400 km, which is approximately 24 hours journey time for a cyclone from the coast. The present network of cyclone warning radars is :

East coast	West coast
1. Calcutta (9-11-73)	1. Bombay 19-1-76
2 Paradeep (5-11-73)	2. Goa (under field test)
3. Visakhapatnam (2-4-70)	
4. Madras (5-11-73)	

Figures in parenthesis indicate dates of establishment. Further plans for extending the network are as follows :

East coast	Expected year
1. Masulipatnam	1980
2. Karaikal	1981

(ii) *Establishment of State Meterological Centre at Bhubaneswar and Cyclone Warning Centre at Visakhapatnam. The former was also required to take over Cyclone Warning work.*

Meteorological Centres are being established at the State Capitals for meeting special requirements of meteorological service for each state, such as, warning for heavy rainfall, frost, strong winds etc. Cyclone warning Centres on the other hand, are required to cater to the needs of the coastal belts prone to cyclones. However, the state meteorological centres on or near the coast perform both these functions. The only exception being Andhra Pradesh, whose capital is far from the coast So a separate Cyclone Warning Centre recommended at Visakhapatnam to meet the requirements of the coastal areas of Andhra Pradesh. These centres have been established and cyclone warning work has been taken over by these centres for Orissa and Andhra Coasts.

(iii) *Establishment of special observing stations along the coast* : 16 special observation stations have been established and 14 along the coast of Andhra Pradesh. A few stations along the West Bengal and Tamil Nadu coast are likely to be established in the near future.

These observatories record only rainfall and wind observations and transmit the observations through high priority telegrams to the concerned cyclone warning Centre during periods of cyclone.

(iv) *Installation of Self-Recording instruments at all department observatories along Orissa and Andhra Coast* : Meteorological Department maintains observatories some of which are manned by whole time departmental staff and rest are manned by part-time observers who are paid all allowance for taking observations twice a day. As only departmental staff are capable of taking observations from instruments which record meteorological variables continuously, known as self-recording instruments, the recommendations envisaged provision of instruments at only such observatories. This recommendation has been implemented.

(v) *Introduction of two stage warning system for warning the State Govt. and District Collectors of the coastal districts* : Under this system, special arrangements have been made to send an "Alert" message to the Collectors of the concerned districts and the Chief Secretary of the State, atleast 48 hours before the expected time of arrival of a cyclone. This is the First Stage Warning. It is followed by a Second Stage Warning atleast 24 hours before the cyclone strikes the coast. Subsequently, the district collectors are kept informed about the cyclone, at frequent intervals, until the danger to the districts is over

(iv) *Warning through AIR for general public at frequent intervals during a Cyclonic Storm* : This has been implemented in full and AIR stations broadcast frequent warnings mostly at hourly intervals and on receipt of communication about sudden unexpected developments.

(vii) *Provision of instrumented aircraft for Cyclone reconnaissance* : This is under consideration of Government.

6 DPD/79 -3

JAMSHEDPUR IS NOT FOR BURNING...

Jamsetji Tata had a dream. It was called Jamshedpur. A place where steel would bloom. And roses. And people. The dream became real. It grew into a city where men from different faiths worked together to forge a brotherhood of peace and prosperity.

Today, there are ashes where there were roses. The fires of an industrial revolution have been replaced by the flames of violence stoked by men who would rather burn than build; men who would rather destroy than dream.

But Jamshedpur will overcome. Because it has done so before. Because 7 days cannot kill a vision that has lived for 70 years.

BECAUSE INDIA IS NOT FOR BURNII



TISCO

Natural Disaster Insurance Scheme

Ashok Harnal
Cantonment Executive Officer
Jammu Cantonment

NATURAL DISASTERS are a universal phenomenon. In the form of floods, earthquakes, cyclones, droughts and epidemics they continue to ravage the earth all over. Developing countries, however, are much more suceptible to the damages wrought by such disasters, for, such disasters strain the governmental machinery. Economy all of a sudden gets a joit. Unfortunately in India the areas that are hit by recurrent floods, cyclones or droughts are often highly populated and important sections from agricultural and industrial point of view.

Many steps have been initiated by the centre and the State Governments to lessen the effects of disasters. Most of these steps relate to developing a system for predicting and fore-warning the course of these disasters. Increased emphasis is now being laid on modern techniques of meteorology in co-operation with other countries.

Natural disasters, however, inspite of these all out efforts remain unpredictable to a large extent. It may be possible to reduce damages in terms of people's lives but the damage to property, cattle and the land may not be possible to avoid.

A scheme for providing insurance cover to such damages on life and property may not be a panacea for all evils, but can go a long way in helping people and reducing the burden on Government exchequer and its machinery.

The scheme mentioned below sufficiently satisfies the following basic ingredients. (a) The insuring agents (b) Kind of disasters to be covered. (c) Fixing the premium, and (d) Participation of the people.

The Agents

In India, presently there are two insuring companies functioning on large scale. These are, the Life Insurance Co-operation of India and the General Insurance Corporation of India and both are nationalised. They, it is found, employ a virtual monopoly and at times the bureaucracy has tended to be sluggish and indifferent Further their tendency would be to apply the same norms and rules being applied in case of other schemes. Moreover both these companies have not penetrated to the village level, whereas a scheme envisaging relief from disasters should have a wide network in villages, must be quick responding and efficient. It shall, therefore, be wrong to entrust such a measure completely to these companies.

The need, therefore, is of such an agency which has a competitive atmosphere, is efficient, and is able to penetrate the villages. It shall not be proper, however, to create a completely new organisation. As far as possible the possibilities of utilising existing village level units need be explored. Keeping certain facts in view the job of insurance can be entrusted to the Nationalised Banks. They can keep a separate account for the insuring activities. It is because of the following reasons (a) there are a number of nationalised banks and there exists a lot of competition among them. (b) by their multiplicity, the management of banks has not tended to be unweidly, (c) there exists a necessary infrastructure and bureaucratic system which is trying its best to penetrate the villages, (d) the present hesitation regarding opening of more branches in rural areas, for lack of business in some places, can be done away with by entrusting them with additional responsibilities.

The work of insuring within the banks should be so adjusted that at the later stage when the volume of work expands a single public-sector bank could be bifercated assigning one section with insuring business and the other with banking affairs. For example the, State Bank of India could be sub-divided as State Insuring agency of India and, the State Bank of India. The move at a later stage shall automatically generate a number of copetin ginsuring agencies. The insuring arm of the Bank shall in turn be reinsured by the Government. The Government backing is a must, for, in case of a severe disaster the Banks would suffer heavy losses and these should be subsidised under the re-insurement cover. For this, the insuring agencies shall, of course, pay a certain premium to the Government.

The Disasters

The various kinds of disasters that afflict this country are floods, droughts, cyclones, and at times, earthquakes and epidemics. Floods and droughts are the yearly phenomenon. There is hardly a year when either of the two or both do not cast their spell. Floods are common in Northern India while drought conditions normally prevail in central and western regions. Whereas cyclones and earthquakes are not an annual phenomenon. Earthquakes of the kind which rocked Lahul-Spiti and cyclones of the sort which washed away a part of Andhra Pradesh are rare. To start with, it shall be better to cover only one kind of disaster. Further steps can be taken on the lines of previous experience. It is proposed that in the first instance cover be provided for drought. This disaster is quite common and takes a heavy toll in terms of human lives and cattle heads. From the statistics available the drought prone areas can be clearly identified. Further, the drought prone areas are often inhabited by the poor people and therefore, need the benefit more urgently.

The Premium

The Premium is a contentious issue. It is here that doubts regarding the viability and feasibility of the scheme arise. Fourty seven per cent of the Indian population is below poverty line. Definitily, they cannot be expected to pay the premium. At the same time taking into consideration the fact that these forty seven per cent do not own any land or much of the material property, one can say that they do not have much to lose, but for them, this little, if lost shall be sufficient to ponder for. Hence, the Government on their behalf can pay a regular premium instead of leaving them

be treated by the social and welfare agencies in the times of disaster. The annual premium that the Government Deposits on their behalf can be recovered by putting them to some work. For the rest, the solution is easier. In this case below a certain detum level, to be determined on various criterion, including the land owned, cattle heads owned etc., option can be left to people. They can either pay in cash or work for Government for certain tie-hours.

The fixing of premium shall depend upon the following factors (a) Amount for which cover is demanded (b) Frequency of the drought (disaster) (c) Population of the area (d) Level of poverty i.e. number of people below poverty line, per capita income etc. (e) Intensity of the previous droughts (f) The cost to support the organization. The list can be quite involved and bewildering. It should, however, be possible to come out of this maze and build a simplified mathematical model for the system. Only first order effects need be considered. The ignoring of second order effects shall be advantageous, in the sense that the corresponding rules and regulations of the insuring business shall be simplified and once a premium has been fixed it can be determined for onward years easily with the previous premium as a base and simple geometrical interpolations.

The Participation

Success of the scheme shall depend upon the large scale participation of the public. Voluntary response must be ruled out because of the fact that a m of the Indian population lives on day to day Habit of saving is almost non-existent, and henc positive attitude for insuring against future disast not be expected. Like banking, insuring is a phe non of still highly educated class and it shall b to convince the common villager of its utility. pulsive legislative measures, at the same time, be ruled out. But it cannot be successful withou ple's cooperation. The only other way left is, fore, of 'passive compulsion'. For instance an unir person may not be allowed to draw loan from the above a certain amount. An insured person c other hand may be given certain incentives. He be allowed to have interest free loan for certain p or given help in terms of farm equipment etc. agricultural cooperatives. There can be many si possibilities.

Lastly it may be mentioned that any such sc shall have other beneficial effects also. It shall p once a large amount of money at the dis of the Governent which can be ploughed back i rural areas and be utilised to prevent as f possible the occurrence of future disasters or help gate its effect. This can have a compound effe reducing the premium (as the risks involved are r ed) thereby encouraging more participation and h more accumulation of money. The scheme shall inculcate the habit of saving among villagers.□

"They also serve . . ."

The students of C.B.M. College, Kovaipudur, under the banner of National Service Scheme, revolted against the chasm that separates promise and performance.

The young idealism of these students burn to re-order the nation, not only through passive protest but with specific action, by adopting Royanpaylayam, Urumandanpalayam, Mathi Palayam and Eachnari villages in the vicinity.

In 1978-79 about 120 students of the college took upon themselves the task of educating children. An inteligent student does not require any help. So these NSS volunteers started coaching classes for the backward and intellectually weak students of the primary schools at Eachanari and Mathiapalayam. Their services were also extended to the adults of the two villages. Ten adult literacy centres run by these students benefitted about 300 villagers. Further they arranged visual educational programme and material contribution in rehabiliating the inmates of Deaf and Dumb School at R. S. Puram, Coimbatore. On all saturdays they gathered near the Out Patient's Ward of the local hospital, to help the patients and the doctors. More than hundred NSS volunteers enrolled themselves as members of the "Voluntary Blood Donation Cell".

In the two villages namely Mathipalayam and Eacharari, these students conducted two special social service camps and constructed two mid-day meal kitchens and 1.5 km long link road.

After all, the students know how to build their motherland.

(—) S. Subrahmanian *FPO, Coimbatore*

National Textiles on Whe

He is a harijan blessed with a degree, self c dence and strong will. Unlike other gradu Ayyadurai of Karuveppli-lankurichi in Pondicl district, Tamilnadu, did not like to waste his money and energy in scanning through wanted col applying for jobs and attending interviews. He l that there were myriad graduates in the vicinity o own place wandering along the streets and wh away time. So he wanted to take up a calling w could enable hi stand on his own feet.

So Ayyadurai became the agent of National Tc Corporation. At the NTC show room he was g training for about a month. Under the self-employ scheme, the State Bank of India advanced him a of Rs. 1500. Armed with the finance and fortified the training, he purchased a bicycle and textiles. goes to villages around his native place and sells saries, shirt pieces, pant pieces etc.

Prices are fixed. No bargain. Whenever anyb tries to do so, he immediately shows the price lis the Corporation. By that way he earns a fixed pr His net income is Rs. 150 per month and is stea increasing. Impressed by his achievement, the b has agreed to grant Ayyadurai a further loan to chase a megaphone to attract potential buyers.

The monsterous unemployment problem vanish all the graduates emulate Ayyadurai.

(—)V. Govindaswamy, *FPO, Pondich*

In a developing country like India which is fast industrialising itself through the establishment of various large and medium scale industries, the ancillary industries development programme can be highly instrumental in promoting a large number of small units.

A. Nag
Birla Institute of Technology and Science, Pilani.

ANCILLARY industries are manufacturers of "intermediates' and not end products. They serve as 'feeders' of raw materials, components and parts to large scale or parent units. But, ancillaries are not necessarily exclusive contractors to parent firm (s). In fact, according to the latest regulations (effective from May 1, 1975), a unit, to retain its ancillary character, should supply or 'propose to supply' (only) at least 50 per cent of its production to one or more parent units. Statutorily, depending on the nature of contracting, the unit may be classified as wholly ancillary or contractual with no open market selling ; partially ancillary or mixed types with partial open market selling, and partly contractual, and. wholly open market seller or non-contractual, that is, units which supply their entire output to the replacement market. Operationally, there are captive and non-captive units, sub-contracting and composite units. Captive units are the ones which are exclusive suppliers to a single parent undertaking like the forty units functioning in the captive industrial estate established by Hindustan Machine Tools, Bangalore. Sub-contracting units, as the nomenclature implies, are a special group of ancillaries which operate as sub-contractors to the primary ancillary units. Composite units are those which are partly ancillary and partly manufacturers of finished products. In all cases of ancillary production, however, the contracting firms are functionally independent units and not subsidiaries of, or owned or controlled by the parent undertakings.

Ancillaries are basically smallscale industries against the parent unit which are generally large-scale undertakings. The new concept of the parent unit, however, includes small scale industries also. Thus, one small-scale industry can function as ancillary to another Paradoxically, therefore, an ancillary unit may be larger in size (measured in terms of fixed investment) than a parent unit because ancillary industries are defined as ones with investment in plant and machinery not exceeding Rs. 15 lakh whereas the limit for small-scale industries is fixed at Rs 10 lakh

The growth of the ancillary industries in India so far, if at all, has been only sporadic. Normally, the ancillaries should show some localisation pattern because of their definitional/operational linkages with large and medium industries. Regional spread of ancillary industries should show very high correlations with locational pattern of the large-scale industries. But, the distribution of ancillaries and large scale manufacturing industries among the different states in India does not reveal any such trend (Table 1), the estimated correlation coefficient being only 0.1344 (which is not significant even at 10 per cent level). In addition to generally demonstrating the lack of correspondence between the spatial distributions of ancillaries and the registered manufacturing industries, Table 1 presents the most dubious case of Delhi which is reported to have as many as 46.1 per cent of ancillaries, but only 2.7 per cent of organised manufacturing establishments.

In terms of value of production or supplies made to the parent undertakings also, the ancillary industry has not made any headway worth its name. Estimates of production show that of the total materials, components and parts (including work done by other concerns) consumed by large-scale undertakings, supplies made by ancillary units do not form even one per cent.

In the industrial estates programme also, the ancillary estates have never been a potent force. Of the total number of about 500 estates functioning in the country, only seven estates have been exclusively set up for ancillary production. Number of units operating in these estates are only 174 (2.5 per cent) against more than 7,000 sheds working in the country ; production of these units is about Rs. 5.25 crore (2 5 per cent) compared to the total production of industrial estates of about Rs. 200 crore; and, employment generated by these units is about 3,300 (3.2 per cent) against total employment of more than one lakh created through the industrial estates. The seven industrial estates mentioned above are, again, the 'captive estates', more like satellite units, of

DEVELOPMENT OF ANCILLARY INDUSTRIES

Need For Proper Parent-Ancillary Relationship

Table 1. Distribution of Registered Manufacturing Industries in India, Statewise, 1972

State	Registered factories		Ancillaries	
	Number	Per cent	Number	Per
Andhra Pradesh	867	6.4	200	
Assam	505	3 7	12	
Bihar	469	3 4	240	
Delhi	363	2.7	3,510	
Gujarat	1,178	8.7	200	
Haryana	315	2.4	138	
Karnataka	603	4 4	550	
Kerala	672	4.9	93	
Madhya Pradesh	674	5.0	68	
Maharashtra	2,996	22 1	1,001	
Orissa	223	1 6	68	
Punjab	394	2 9	100	
Rajasthan	194	1.4	24	
Tamil Nadu	1,289	9 4	635	
Uttar Pradesh	903	6 6	150	
West Bengal	1,749	12 8	600	
Others	204	1 6	18	
India Total	**13,598**	**100.0**	**7,607**	**1**

some large scale public sector undertakings (except Royal Enfield (India Ltd.,) and not operationally independent industries.

The above account on the growth and structure of ancillary industries in India establishes the bare fact that the development of the industry has not yet taken off or gathered momentum, the ancillary movement still remains a slogan congned to the blue prints of industrial policy resolutions and national plan documents. The most vital link which is missing in the development process is parent-ancillary relationship which in India is still in embryonic form, and, may in final analysis, be attributed to lack of proper national perspectives.

Major Issues

Given operational feasibility, the emergence or existence of ancillary industries follows from the fundamental law of comparative cost advantage or economies of scale (some empirical studies, however, have shown that this is not always borne out by facts) In all practical situations, however, operational feasibility or modality of the relationship becomes the most vital factor.

Some sample surveys conducted in selected states (West Bengal and Karnataka in particular) highlight the major issues at stake in the development of parent-ancillary relationship in India. There are two facts of the relationship. The first one is the operational problems related to fulfilment of contracts in the short-run ; the other is the more fundamental issues which affect the development and long-term growth of ancillaries.

Generally, there are no major problems of price tion faced by either the parent firms or the ancil More common complaints of the parent unit against lack of standardisation of quality and irr rity of supplies or lapses in keeping delivery sche

The reactions of the ancillaries to this reveals more fundamental problems which result from at of long-term contracts with parent manufacturers more importantly, shortages of basic raw ma This affects their production efficiency. Becau considerable under-utilisation of installed cap average utilisation of production capacity in the lary industry is only about 50 per cent. Only full lisation of capacity can reduce capital costs and c the structural disequilibrium to some extent means stepping up of production; but, for ancil given the production structure, output becomes a tonic function of parent demand. If there is either ness or discountinuity in parent demand (inc those situations when the parent units themselv passing through recessionary phases) there is to be repercussions on ancillary production or activity levels

The low output-capacity ratio itself is explaine addition to the demand factor, by primary in-p pediments. It has been observed that the ancillary show a rather high rate of turnover and, a prop to convert cash balances into whatever amount of materials they can procure

Sometimes, the ancillaries fail to maintain thei rage level of activity purely for financial reasor vestigations reveal that, in case of many ancillary payments for output are received with consid

Table 2. A Profile of the Industrial Estates Exclusively set up for Ancillary Production

Location	Name of the parent unit	No. of units working	Production (1971-72, Rs. lakh)	Employment
Bangalore	Bharat Electronics Ltd.	11	28.91	351
Bangalore	Indian Telephone Industries	20	154.69	529
Bangalore	Hindustan Machine Tools	51	71.65	907
Bhopal	Heavy Electricals (I) Ltd	28	108.00	225
Ranchi	Heavy Engineering Corporation	34	0.25	250
Tiruchirapally	Bharat Heavy Electricals	10	32.03	427
Madras	Royal Enfield (India) Ltd.	20	143.75	600

time lag. This depletion of liquidity, in many cases, dampens the normal activity of ancillary firms

Parent-ancillary relationships are also impaired because of lack of suficient communication linkages between them which is very vital in the development of any bilateral relations. It becomes extremely difficult for the ancillaries to contact large industrial undertakings directly and this stands in the way of securing enough work-orders. Also, this promotes the growth of unscrupulous intermediaries. In fact, the biggest obstacle in the way of healthy growth of parent-ancillary relationship in India seems to be the "jobber middleman clique". The parent firms usually place orders on lowest tender basis. In most cases, middlemen activities dominate the scene. Lowest quotations are given in the name of ancillaries which do not really exist and orders are supplied by the middlemen through the jobbers. The jobbers do not have any definite line of production and cater to the demand of all and sundry It has been observed in West Bengal that, because of the present system of placing orders, the jobbers are making more progress through the intermediaries than 'ethical' manufacturing undertaken by bonafide ancillaries.

An analysis of functioning of the system in other countries shows how effective can parent-ancillary relationship be in promoting harmonious industrial growth The Japanese example is a case in point.

In Japan, the intermediaries do not dominate the industrial scene, and, as a result, parent-ancillary relationship is both direct and strong. The parent units themselves assess the raw material requirements of the ancillaries and also ensure, if necessary, the supply of these materials. The parent firms also offer financial and technical assistance, wherever necessary. In one word, the parent-ancillary relationship in Japan is built through a continuous process of exchange (in practice, the flow is more uni-directional from the parent firms to the ancillaries) of know-how, industrial intelligence and organisational methods

National Perspective

That proper parent-ancillary relationship can evolve even under Indian conditions has been demonstrated by the captive units or auxiliary industrial estates of some public sector undertakings in the engineering sector (mentioned above). If such relationship has not become a general characteristic of the industrial economy of India, this is because there is lack of clear national perspective on this.

In the national programmes of development of small-scale industries, including the new industrial policy recently announced by the government of India, the policy prescriptions aim at removing the more common difficulties of the various small scale units, but, have never been geared to the special problems of the ancillary industries (the most important being the problems vis-a-vis the parent industries). There are evidences of occasional reliefs and concessions announced by the government, but, there is lack of a comprehensive package of development for this sector. The relative neglect of the sector is also revealed in poor documentation, official statistics compiled and maintained for the sector being the poorest of all the small-scale sectors. It may be rather disquieting to note that in the Census of small-scale industries undertaken by the Office of the Development Commissioner (and results published in two volumes), there is no separate analysis of the ancillary industries. Lack of rigour in the national approach to ancillaries is also evident in the very slipshod definition of the industry.

This is partly because ancillaries have never been viewed as a sector distinct from the rest of the small-scale sector and a potent force in the small industries movement in the country. But, if the large undertakings may be motivated to converge to such production relations, ancillaries would be the most surer ways of promoting small-scale industries in the country. Very high incidence of sickness and mortality of small-scale industries has raised serious doubts about the efficacy of various governmental policies. Also, many pitfalls of rural industrialisation programmes (including rural industries projects) are becoming apprent now. The success of industrial estates programmes also have been largely confined to the urban areas. "In rural and semi-urban areas, it (the programme) languished owing mainly to unsuitable location, lack of integrated planning and, marketing facilities and shortage of raw materials" (Draft Fourth Plan). Many of these hindrances, which are applicable to rural industries in general, may be removed through appropriate ancillary development programmes.□

SOCIAL FORESTRY IN INDIA

Social forestry is a new concept of forest creation, management and judicious utilisation of goods and services generated therefrom. It aims at combining the idle land, labour and water resources to optimise production of farm manure, firewood, fodder, food, small constructional timber and to stabilise soil. It calls for a monolithic integration of agriculture, forestry and animal husbandry. Social forestry embodies the Gandhian philosophy of self-sufficiency, economic growth and community development.

B. P. Srivastava,
Inspector General of Forests, Ministry of Agriculture and Irrigation

and

M. M. Pant,
Forest Economist, Forest Research Institution and Colleges, Dehradun

The main constituents of social forestry are : farm, rural and urban forestry. The total output from the land is a function of initial investment on tree planting, irrigation and fertilisation and the productivity of the man-made forests can be increased by a closer spacing of plants and through irrigation and fertilisation. This, though entails a higher investment, per unit area, is likely to yield higher returns.

For the success of social forestry programmes a change in the attitudes of the forester, villager, politician, decision maker and all other involved is inevitable.

Through integrated land use planning and extensive social forestry programmes alone, sustained flood control and environmental stability can be achieved economically.

SOCIAL forestry or forestry for community development is a new concept of forest creation, management and utilisation of goods and services generated therefrom for the benefit of the society. Forestry can contribute substantially for the prime human necessities namely ; food and shelter. For cooking food, energy is required. In the absence of any regular source of processed domestic fuel, 95 per cent of the fuels comprise of firewood, cowdung and agricultural wastes in villages. Indian planners and farmers know that these non-commercial fuels, cowdung, and farm wastes are very useful as manures and their diversion to agriculture would result in higher agricultural production besides arresting growing aridity of the climate and soil erosion. But the villager/farmer is helpless as he has no alternative fuel within his easy reach. The social opportunity cost of burning huge amounts of soil nutrients each year is considerable. A rupee spent in replacement of cowdung of farm wastes means an indirect earning of Rs. 5 to Rs. 10 by way of production of additional food crops. Some Energy Survey estimates provide the following orders of consumption during 1975-76 in the rural areas :

(i) Fire wood and charcol 1400 lakh tonnes
(ii) Cowdung (dry) : 750 lakh tonnes.
(iii) Farm wastes : 400 lakh tonnes.

The Fuel Policy Committee's estimates of the fuel demand for domestic sector for the years 1978-79 and 1990-91 are shown in table on page 23.

Most commercial fuels, other than hydro-electricity, are practically non-renewable. With the passage of time these stocks are bound to dwindle. Consequently, with the increase in population and rise in the per capita income, the demand for commercial fuels will increase. The bleak prospects in the production of commercial fuels are resulting in their soaring prices and forcing the rural masses to depend increasingly on the non-commercial fuels. The planned decrease in the use of firewood and charcoal from 1320 lakh tonnes to 1220 lakh tonnes during the period 1978-79 to 1990-91 is unrealistic. Considering the fact that most commercial fuels are non-renewable, efforts are needed to replace the use of exhaustible fuels with those renewable. Also, conditions should be created so that enough wood fuel is available to diversify the cowdung (10.70 per cent) and vegetable waste 17.98 per cent) to the farm as manure. The use of cowdung for the generation of biogas fuel is picking up but slowly. There are about 25,000 biogas plants in the country, located mostly close to urban areas whereas our masses are located in over 575,936 (1971 census) scattered villages. The high social cost of using cowdung and farm waste as fuel has brought the importance of wood—a renewable, versatile resource—to the forefront. Tree growing requires land and human resources. In India, we have little dearth of these. Unutilized scattered land and unemployed masses in rural areas are abundantly available. Social forestry is the answer to utilize rationally these natural resources hitherto not fully harnessed.

The beneficial role of green vegetation on soil management and erosion control is universally acclaimed. Faulty cultivation of the hill slopes, shifting cultivation or zhum combined with large scale deforestations, road building, colonisation in the catchment areas of our main rivers have caused serious erosion and imposed a heavy cost on the society. Year after year, the river bed is raising with eroded material and causing sever floods down the course. Every year floods bring untold misery to vast areas. Flood control and relief measures impose a serious drain on national resources. Recurring losses of life, live-stock and property remain largely uncompensated. Tree planting along river catchments, constitutes a positive approach to arrest the evil processes of soil erosion.

China offers a spectacular example of how during recent times, through planned and concerted mass planting efforts and farm forestry practices over 550 lakh hetcare, she minimised flood havoc and consolidated river and stream catchment. The land thus salvaged is restored to the communes for cultivation

Social forestry aims at combining the idle land (including solar energy), labour and water resources to the best interests of the society in such a manner that the community becomes self-sufficient in food, farm manure, firewood, fodder, small constructional timber, fruits, flowers seeds etc The soil is protected against water and wind erosion on a sustained basis.

It calls for various permutations and combinations of forest trees with food crops, horticultural crops, live stock for meat and dairy. Such composite utility of the solar energy through vegetative growth promotes material growth as well as ensures the protection of local environment and ecology. Recreational and aesthetic amenities of the tree cover are the bye-products of social forestry which further ameliorate human surroundings. From the standpoint of planning, agriculture, forestry and animal husbandry are equally important and inter-dependant. Social forestry is, in effect, an integral part of the Gandhian philosphy of economic growth and community development. Imagine the economy in which the presnet idle land and water resources, owned by individuals, or communities, are combined with the idle human resources, with the above objectives. The social benefits generated and the self reliance achieved as a consequence would be tremendous.

A conceptual distinction has been drawn between Production Forestry and Social Forestry although both generate social benefit. Production Forestry aims at producing timber and wood for industrial uses. The objectives of social forestry as defined by the National Comission on Agriculture (NCA, 1976) are : (i) Fuel wood supply to replace cowdung, (ii) small timber supply, (iii) fodder supply, (iv) protection of agricultural fields against winds ; and (v) recreational needs. Its main components are (i) farm forestry, (ii) rural forestry, and (iii) urban forestry.

Form Forestry

The concept of farm forestry formulates the technology of adventageously combining agriculture with forestry. It is an innovation with far reaching significance and envisages the introduction of a green revolution in India's agricultural economy. As it is, our agricultural economy is lop sided. We produce food but due to acute scarcity of firewood resources, we burn extensively cow dung for cooking and heating This is like robbing Paul to pay Peter. Cow dung with litter and green leaf makes an organic manure which serves as life blood to soil. As a re

sult of large scale burning of cow dung, there is a continuous depletion of phosphorus, potash and nitrogen from the soil, adversely affecting its fertility. It is estimated that over 4580 lakh tonnes of wet dung is diverted annually to the rural hearths in India. At five tonnes per hectare this dung could fertilize 910 lakh hectares of land. Assuming an additional yield of five quintals of food per hectare, the annual loss of food is thus estimated at 450 lakh tonnes valued at Rs. 36.00 crore. Farm forestry aims at averting the recurring colossal agricultural losses and diverting them to additional productivity. The release of cow dung for its legitimate manurial uses in field and the creation of firewood resources within the farm itself is the main objective of farm forestry.

In addition, farm forestry also aims at diverse benefits to the farmer : (a) building up his balanced economy and self sufficiency, (b) providing firewood, small timber and fodder, (c) extra source of revenue. Physically, the vegetative belt helps stabilize soil, conserve soil moisture and prevent air and water erosion.

Trees planted on farm bunds ordinarily serve as fence between two plots and also as shelter belt in desert prone areas. In chronically drought effected areas agricultural lands get sanded periodically, the dry winds cause excessive surface evaporation thus creating moisture stress against the agricultural crops. Trees and bushes. judiciously planted serve as wind breakers, save the land from degradation, and better soil moisture and fertility. In areas where sand casting is a regular feature, trees serve as effective checks against sand casting thereby preserving land's suitability for agriculture. Impressive work of this nature has been demonstrated in Mohindargarh district of Haryana where by creating systematic wind breakers, sand intrusion from Rajasthan has been substantially checked. Outstanding work has also been done under the Social Forestry Schemes in the States of Gujarat, Tamil Nadu and Rajasthan.

Farm forestry boosts the rural economy without impairing the quantity and quality of the normal yields from the fields. However, the choice of forest species and a general lay-out of trees and agricultural crops in a farm are of vital importance for the mutual success of field crops and trees. The extent of adjustment needed in a locality depends upon the type of soil, rainfall, temperature, soil moisture, wind conditions, etc. Nevertheless, it is hoped that the experience gradually gathered by the farmer in due course of time will enable him to use his own discretion in this matter with better practical results.

To achieve the requisite degree of alround self-sufficiency all that an individual farmer has to do is to plant suitable tree species/bushes within his farm in such a pattern as to avoide any risk of inter-encroachment between field crops and the forest vegetation. The system of dual cultivation will not deprive the farmer of his fredom to harvest his field crops in their respective seasons. Only in the case of tree/bush crop he will have to extend the time horizon, in the initial stages, to about 5 years for receiving direct monetary and material returns. Once the cycle starts, then the yield and return from the latter sources worked in replicated order also become an annual feature.

As a first step towards farm forestry, the farm can confine to growing their own timber, fuel and f der trees along field bunds, wasteland, and margi land where cultivation is not possible. The main bu are made to demarcate one area from another a collectively occupy enormous land. The total area the cultivable land in U.P., Haryana ,and Punjab, estimated at 34,047,000 ha. Taking a paltry per cent under bunds, the total land coverage in th states is estimated at 340,470 hectares or 3,404.7 km. This otherwise unproductive area could be u lied for growing more than 90,7690 lakh trees. that the individual farmer has to do is to dig 1.25 m apart in a single row along his field boundr obtain good sturdy plant of his choice from the nea Forest department nursery and plant them in July August. No special protection is needed since plants will get automatic protection while Kharif a Rabi crops are standing. By the time the Rabi c is harvested these plants become sufficiently tall a sturdy. They need no extra irrigation as the irrigat given to the food crop will benefit the plants al Fertilizers, leaching below the crop root level wo be utilised by these trees.

The farmer can make the trees grow to suit his o economy. The shelter provided by trees can be u lised for cow sheds, tractor sheds, etc.

The project must be taken up by individual farm If they plant the bunds and other uncultivated a in and around their farm holdings, then valuable ca tal can be generated within few years through gro ing trees. A seedling costing 10-15 paise become tree in a few years worth Rs. 40-80. Case studies certain irrigated farm forestry projects in Gujarat sh that the Financial Internal Rate of Return (FIRR) ceived by the farmers is as high as 75 to 90 per ce

Nedless to say, trees are cash crops with a disti advantage over the traditional agricultural cash crop the product is not perishable. If at any time, owner does not get the expected price, he need not h vest his trees, the trees will put on valuable growth a the owner can always sell them when the market con tions are favourable. As against tree crops, in case of agricultural cash crops the farmer has no alt native but to harvest them, irrespective of the mar conditions.

In India, farm forestry or tree planting by individ farmers seems to be the only solution to meet the ch lenge posed by the widespread scarcities of firewo timber and fodder and the growing insecurities of environments. The resources of the State Forest parements are inadquate to plant and maintain all vacant private lands in the country. Through fa forestry this responsibility is decentralised and the t resources thus created are better protected and man ed due to individual ownership From the social po of view farm forestry provides the quickest means increasing the country's tree resources and fo area.

The green revolution envisaged in agriculture can be achieved without the farmer's self-sufficiency fuel, fodder, manure and small constructional timb

Rural Forestry

Also called extension forestry, it encompa forestry on community and panchayat lands, degr ed forest, road and railway sides, canal banks,

for meeting the needs of the rural people. It also includes restoration of derelict areas bearing scars of quarrying, mining, road construction, brick manufacture, lime burning, etc.

The objectives of rural forestry are similar to those of farm forestry : meeting the needs of the rural masses. There is, however, one important difference. This is with regard to the ownership of the land resources : in farm forestry the ownership of land is ordinarily individual while in rural forestry it is communal. This difference in ownership poses peculiar protection problems and needs the involment of the community as a whole for the effective implementation of the projects

The social forestry programme involves the rural masses in a big way who can contribute to the overall economic development of the region and also share the benefits. Systematic involvement of the rural masses will bring to the forefront the multiple advantages of trees for food, fodder and subsidiary products. The primary objective of all rural forestry programmes is to lift the rural masses from the mire of want and insufficiency The fulfilment of this objective is feasible through planting trees along farm and on waste lands

A number of cottage industries can develop with the aid of tree resources Among others are : honey, sports goods and silk, oil from seeds of mahua, neem, kanji, paper from sarjan wood, household furniture from shisham, babul and even eucalyptus, diary industry from fodder

The ethics of rural forestry are bound to induce public interest in the well being of public owned forests. Once the farmer is assured of his own self sufficiency in fodder, fuel and timber from his own land he is not likely to encroach upon public owned forests. The changed circumstances will go a long way to lift illegal pressure against public forests which, at present, constitute serious threat against them

Idle Land Resources

Social forestry aims at growing of trees singly, in groups or in strips. Its object is also to carry out planting of trees wherever possible. At present, among others, the idle land resources consist of road sides (length over 12,24,000 kms.), sides of rail track (length over 59,790 kms), canal banks (length over 1,50,000 kms.) and drainage chanels (length over 20,000 kms) These alone offer over 9,02,000 ha of land that could be profitably planted. Other waste lands are · river banks, degraded areas in villages, ravines, swamps, cremation grounds, and compounds of schools, colleges, hospitals, buldings, etc. In India, about 43 million ha. area is classified as uncultivated, non agricultural and barren land These degraded areas mostly represent land deprived of their erstwhile natural vegetation The bulk of these areas is amenable to the regrowth of trees. Out of 750 lakh hectares classified as forests, a significant chunk represents decrepit forestly and stands in need of rehabilitation At the same time, there are about 2200 lakh people, mainly in the rural areas, who are living below poverty line because they are either unemployed or underemployed. These idle land and human resources be productively employed, given appropriate technology, choice of suitable trees species and a moderate investment to create forest resources in the rural areas. Given the land and human resources, forestry does not require much investment high skill, sophisticated machinery, etc , to generate the much needed rural employment and income.

Broadly speaking, one hectare of plantation activity, depending on the area, species selected and the spacing adopted, generates 150 to 500 man days of employment in the rural areas during the first three years. Later, the harvesting of the forest crop, provides employment at a higher level of income for almost twice the number of man days. Subsequent periodic thining operations generate more employment possibilities. This is when the secondary employment in the processing of wood and other forest products due to their extensive forward linkages is not considered.

Road side plantation activity can be as labour intensive as demanded by the local conditions, the technique of planting, etc For example, in the case of mound planting needed in saline or water logged areas, the employment potential varies from 614.36 man days to 632 18 man days at 330 plants per hectare.

Although, the road side plantations (because of their numerous externalities such as shade and aesthetic values, their functioning as shelter belts, environmental and ecological protection machanisms, etc., which are not paid for) are not generally expected to yield commercial returns comparable to the market rates on investment, yet some case studies show that the road side plantations are financially viable.

The planting of trees in groups or strips in village areas, also show encouraging financial returns. Even in saline and non-irrigated soils the Financial Internal Rate of Return (FIRR) is seven per cent in addition to the other amenities offered by the trees.

Urban Forestry

Urban forestry aims at bringing trees to the door of the urban people. Broadly speaking, this concept lays emphasis on the aesthetic development of urban areas. Flower and fruit trees of ornamental variety which flower and fruit at different seasons, are planted along road sides and canal banks near towns, villages and cities Urban forestry also envisages beautification of houses, roads and vacant lands as also creation of tree reserves, in towns and cities. Borivali Park in Bombay, Kukrail forest in Lucknow and Banargatta Park in Bangalore offer illustrations of such achievements These parks serve as urban health resorts and are extremely popular with the town dwellers

In Gujarat, some interesting and unique forestry conventions have been created, such as : 1 every residential compound is to have a minimum of five trees. This is obligatory before the approval of the map and permission to construct the building are accorded, 2. felling of trees is banned Even the road alignment is invariably changed to avoid felling of trees, 3. all social ceremonies conducted by the Governor, Ministries or V. I Ps must be preceded by tree planting rituals, 4 religious ceremonies such as Kathas, etc., must be marked by planting trees

Pilot projects on Social Forestry

Gujarat State has adopted social forestry in a big way Tree consciousness has been culturally fostered. Important social ceremonies such as marriage and religious function like thread ceremony are preceded by tree planting.

Educational Institutions : Many educational institutions, Schools, Colleges, Universities, Polytechnics, have created Vidyarthi Vans on vacant land in and around their Institutions. Worth mentioning here are the urban forestry (beautification) programmes executed in spare time by the students of Govt Polytechnic for Girls, Gujarat University and St. Javiers College, Ahmedabad. The Forest Department has introduced schemes for raising nursery plants through voluntry efforts of school activities. In 1977, about 54 schools scattered in eight districts of Gujarat raised 4 66,500 seedlings. During the year 1978, about 84 schools are pursuing this programme. Seeds are provided by the Forest Department and the ensuing seedlings are later purchased by it at a nominal rate of 15 paisa per seedling. The money thus raised is utilised for giving aid to the poor children, for purchase of books, sight seeing, excursions by students, etc. Through this activity the forest department is inculcating among the citizens of tomorrow conciousness for trees and the glory of green revolution. If each student plants 10 seedlings a year, a total of over 7705 lakh seedlings can be raised annually in the country.

Sewage Water Utilization : In several cities, sewage poses a serious problem as a source of pollution. The forest department has ingeniously laid out shelter belts on screens of trees around such noxious, venues. The sewage water serves to irrigate the tree species and its solid components form valuable organic manure for fields The trees also absorb foul gases emenating from sewage dumps. The truth of the aphorism Trees swallow poison and release nector is exmplified here.

Landscaping Committee, Gandhi Nagar : The landscaping committee with the expertise of a forestry export is engaged in planning the beautification of Gandhi Nagar, the new capital of Gujarat.

Role of the services : The progress made by the State Reserve Police Force II, Saijpur, Ahmedbad, under the giudance of Forest Department is commendable.

The camp has an area of 27.924 ha. Since 1963, the unproductive portions of the land, measuring nearly eight ha. is being planted

The jawans have planted 28,404 seedlings supplied by the Forest Department during Van Mahotsava. The plants are irrigated, tended and looked after by the jawans in their spare time. The shelter belts and the avenues so created are serving extremely well. The growth is excellent and in two years the dominant trees have attained a height of 12 mts. The plants are irrigated by sewage water, which serves both as manur and irrigation The profitable utilisation of sewage waste by the Gujarat Forest Department is a wonderful contrivance. The value of the green capital hitherto created within the Saijpur campus is estimated at Rs. 2,84,000 assessed at Rs. 10 per tree.

The tree cover has brought about a healthy influence on local temperature. The Commandant has reported that the temperature in the SRPF II area is about 3°F lower than elsewhere in the surrounding areas.

If the example set by the State Reserve Police Force II, Saijpur, Ahemdabad is followed by all police forces within the State, land lying unproductive to the extent of about 319 ha could be planted with trees. In 3-4 years the value of trees so planted would be over Rs. 112.18 lakh.

In India, the N.C.C., Army, I.T.B.P., B.S.F., P.A.C., C.R.P. (Nagaland, Mizoram) S.R.P.F. etc. are potential sources of massive man power. The land within their campus, neighbourhood, particularly along catchments of river system provide ideal grounds for tree planting. If the disciplined men of these units are given free seedlings and the technical know-how, considerable areas can be planted annually at little cost to the Government.

Planting Trees in Maliki lands in Dangs, Dharampur : In Dangs, Dharampur and Vyarat forests some adivasis have been practising shifting cultivation for several years. The evil has greatly impaired land fertility. Erosion and poor cultivation techniques have reduced the adivasis to abject penury. The forest department has drawn up a unique scheme for the good of the people. Technical and financial help is given to the inhabitants. The land is planted with teak and bamboo The areas are worked on a 15 years rotation. During this period, when the tree crop is growing, the villagers are given a subsistence allowance equivalent to their average annual earnings from cultivation and also alternative employment. The Forest Department raises the plantation and maintains it for the first three years. Thereafter the plantation is entrusted to the care of the land holder who continues to receive subsistence allowance annually. Timber derived from tending operations is first offerred to the land holder for his bonafide needs. The remaining timber is sold. At the end of 15 years teak trees and bamboos would be fit for exploitation. From the sale proceeds, the subsistence allowance (without interest) is to be deducted and the balance given to the land owner as an extra income from their land holding.

This scheme can be adopted with suitable modifications in Arunachal, Meghalaya and Nagaland where zhum cultivation, extensively practiced, is runing valuable land resources, and causing environmental problems.

Criteria to judge social forestry programme

The social forestry projects are meant to bring a social change, to ameliorate distortions in the economy and to ensure a more equitable distribution of income and a more equitable distribution of the decision making powers.

We have, therefore, to evolve new criteria for assessment of social forestry projects and go beyond the traditional cost benefit ratio. For example the indices for comparing different farm forestry projects could be : (i) their employment promotion potential, (ii) extent of release of cowdung from hearth to field as manure, (iii) structural timber and firewood resources created annually, (iv) availability of fodder, fruits, seeds, bamboos and canes and total income from these sources on an yearly unit area basis. The impact of each programme on these indices can be found by comparing the situations between farms/villages with forest trees and those without.

At the microlevel of planning, the social forestry programmes should define as to how forestry can help the rural development activities particularly in regard to : (i) wood fuel and timber uses. In case charcoal is manufactured, it should be done in closed stills so that the ensuing gases, etc., are recovered (ii) fodder, (iii) leaf manure (iv) forest and wood products based cottage industries. Social forestry programmes should also be concerned with : (i) analysing the land tenure systems affecting the conservation of tree resources created under social forestry and an equitable distribution of the gains therefrom, (ii) identifying village leaders and fixing target groups of the rural population to be trained in social forestry practices and determining the course contents of training programmes.

TABLE
Estimated Consumption of Fuels

Fuels	1978-79	1990-91	Estimated Consumption in Coal replacement in million tonnes			
			1978-79	As a percentage of the total	1990-91	As a Percentage of the total
Commercial :						
1. Soft coke	5 mt	20 mt	7 5	3.096	30.00	9.927
2. Kerosene . .	3.5 mt	6 mt	29 05	11.956	49.80	16.478
3. L.P.G.	0.4 mt	2 mt	3.323	1.366	16.614	5.497
4. Electricity .	8 b. kwh	25 b. kwh	8.00	3.292	25.00	8.274
3 .			47 873	19.710	121.414	40.172
Non-Commercial :						
5. Firewood and wood for charcoal	132 mt	122 mt	125.400	51 61	115.900	38.350
6. Dung cake (drv) .	65 mt	53 mt	26.00	10.70	21.200	7.015
7. Vegetable waste	46 mt	46 mt	43 700	17.98	43 70	14.459
			195.100	80.29	180.800	59.824
Total . .			242.973	100.00	302.14	100.00

Progress of social forestry schemes in India

Under Social Forestry programmes three centrally sponsored schemes have been taken up, namely, (i) mixed plantations on Panchayat lands and forest areas; (ii) reforestation of degraded forests; and (iii) integration of soil and water conservation in Himalayan Region. The schemes have high employment component for unskilled labour in rural area. The central subsidy during 1977-78 has been raised considerably to enable the States to implement the programmes of plantation activity on a much larger scale than before. In India, under social forestry schemes about 1,500 hectares have been planted up during 1975-76 and 17,000 hectares and 1,355 row kms. during 1976-77. The programme for 1977-78 was to plant up 6,300 ha and 5,400 row kms. It is hoped that during 1978-79 the area covered will be 105,000 hactares and 3,700 row kms. besides advance work for raising plantations during 1979-80. Plantations under social forestry schemes during the Fifth Plan period are thus expected to be about 186,500 hectares and 10,500 row kms. under the Centrally Sponsored Social Forestry Schemes.

For the success of the social forestry programmes, the attitude of the forester, villager, politician, and decision maker, and all those involved with the creation, maintenance and utilization of the natural resources, must change It may also need some institutional changes in education, training and motivation of the rural masses, research and administration. While talking of integrated land use, leading to the joint production of basic inputs needed for human existence and survival, the Chinese experience becomes relevant to us. The results produced by the Chinese in their efforts to create legendary shelter and wind belts and the success attained by them in mitigating floods tell volumes on how manpower can be used to attack social problems in a compressed time frame In India too identical achievements are possible only if all land development plans integrate social forestry as one of its essential components. ☐

Health and Floods

Air Cdr. P. Dharmaraju
Director, Ministry of Health and Family Welfare

People living in the disaster prone States should be prepared to face the natural calamities by educating them regarding various health hazards likely to be encountered on account of floods such as diarrhoea, dysenteries, gastroenteritis, cholera and infectious hepatitis (Jaundice) etc. These diseases are conveyed by contaminated water and infected flies. If proper preventive measures are not taken by the community, outbreak of epidemics may occur leading to large scale suffering and even death. So the community should be educated on the prime necessity of consuming safe and potable drinking water when the village and hamlets get marooned the flood waters Wells being the main source of drinking water are normally chlorinated by the health authorities and the effected people are advised to consume water from those wells only. To purify water from handpumps, people have to use purifying tablets.

The human excreta and animal dung in open [illegible] attract large number of flies which spread the [illegible] diseases. Community education on the pro[illegible]

Continued [illegible]

Role of CRPF in Rescue and Relief Operations

Officers and men of Central Reserve Police Force are frequently called upon to assist the civil administration in combating calamities such as floods, fires, cyclones etc.

CRPF realises that it is winning the confidence of the local people which helps them in successfully performing their duties everywhere Personnel of CRPF try to achieve this by sharing their joys and sorrows and take floods and other natural calamities as opportunities for the service of the people.

As long as operational task is not affected, CRPF units go to the aid of local people to the maximum extent in the event of an emergency without waiting for orders from higher formations

On receipt of any information about the threat of floods, local commanders of CRPF units act immediately and send parties to assess the situation.

At the same time liaison is maintained with civil authorities. They are informed about the extent to which CRP can render assistance. Details of relief plan are finalised.

Rescue parties are sent to evacuate people by m of boats or improvised rafts. Personnel who manning essential services are helped to carry their duties. Rescue parties set up camps. Drop zones are made in high altitude areas in case ra etc, is to be air-dropped. Arrangement of helipad top of suitable buildings or high ground are n for evacuation.

Maximum strength of personnel, depending u the availability is employed to plug any breache bunds or in raising the heights of bunds.

Unit doctors aided by Medical Inspection R Staff help in mass inoculation and vaccination. Med aid to sick and old people is provided. Hospitals run for the purpose.

In the past the CRPF rendered a yeoman ser whenever floods affected any part of the country.

During the unprecendented floods of Patna September, 1976, its personnel battled with the floo Pun Pun river, distributing maunds of chappatis vegetables in rescue camps and rushed medical te to the flood-hit villages.

Under the headline "CRP jawans saved Patna fr floods", the "Times of India" stated on October 1976 : "The capital of Bihar would not have esca the fury of the flooded Pun Pun river if two Battali of the Central Reserve Police had not plugged a metre-wide breach near Saristabad village in the I Pun bypass, which is a road as well as a protec bund".

On February 2, 1978, the Director-General CRPF, presented a cheque of Rs. 7,92,191 as vol tary contribution of one day's pay by CRPF persor to the Prime Minister's National Relief Fund providing relief to the cyclone-affected countryme

The officers and men of the Central Reserve Po Force from all formations in the country volunta contributed a sum of Rs. 2,05,873.72 to the Pri Minister's National Relief Fund on 24-2-1979.

In the wake of the unprecedented floods in D last year, the Force had placed as many as ei Battalions comprising approximately 8,000 person at the disposal of the Delhi Administration for meet the challenge of law and order and going to the of the flood-hit people. This was, perhaps, the larg body of men placed at the disposal of the local ad nistration by any force. ☐

A Peep into our Science Policy

Prof. P.R. Sengupta
Chief, Institute of Applied Manpower Research.

There is a lot of controversy going on today about some supposed reversals in the science policy adopted by the present Government. Some have raised an alarm saying that the present Government has adopted a retrogade science policy that will put the country at least 20 years behind by undoing the achievements in science and technology made during the past two decades. Most of this seems to be a political propaganda. The problems that our science and technology and R & D are facing today are projections of the past. In fact there is no major shift in the science policy. Though the present Government is talking a lot, about science and technology, and rural development the draft Sixth Five Year Plan does not show any evidence about linking of R & D to rural priorities through a conscious and judicious allocation of funds. It is similar to that in the Fifth Plan with a proportionate increase in funds for all the existing S & T agencies including CSIR.

Science is a natural pursuit of knowledge like history and philosophy and as such there is no reason why research in basic sciences should be affected by a science policy. India has a very ancient tradition of scientific research. The performance and contribution of ancient Indian scientists in Chemistry, Astronomy, Mathematics and Physics are well known. Even during the British period when scientific research by Indians was discouraged by the Government, we had eminent scientists like Acharya Jagdish Bose, Dr. C. V Raman, Dr. Megnad Saha and Prof. Satyen Bose. Moreover none of the outstanding scientists like Newton, Faraday, Maxwell, Covendish, Einstein or even Badeen and Pauling were products of any science policy. It is, therefore, wrong to suggest that advancement of knowledge in science or fundamental research depends upon the government policy. Great scientists had to struggle against heavy odds which only helped to bring the best out of them.

Need for a Science Policy

The public policy for science enters in the picture only when we talk about its impact on society. After the Second World War, the new Industrial Revolution of the forties brought out clearly that economic growth of a nation is not limited by the constraints of physical resources. It showed that economic and industrial growth are closely linked with effective utilisation of science for technological development.

In the overall input output system of an economy, technology plays the role of a transformation matrix, transforming input into marketable output. It has three components : Process Technology; Organisation—Management and Environment ; Manpower—technological competence and skill. Process technology is the fundamental variable in this overall transformation. It changes both the organisation and the labour/manpower structure. The well known Industrial Revolution started with the mechanisation of this transformation matrix. It transformed the entire social organisation and manpower/labour structure in Europe. Industrial Revolution was partly responsible for colonisation by European countries in search of markets and raw materials.

The industrial and economic growth of a nation depends on increasing the efficiency of technology or on technological development. This is recognised in our science policy resolution wherein it says: "The goal of national prosperity lies in the effective combination of three factors : Technology, Raw Materials and Capital of which the first is perhaps the most important". It is very true because as our experience with science and technology has shown. technology can be effectively used for capital formation and input or raw material substitution.

Technological development is achieved by application of scientific knowledge for developing a marketable technical innovation; either in terms of new process or a new input or product. The entire process of utilising scientific knowledge for introducing technical innovations is known as Research and Development (R & D). The complete R & D chain for marketing a technical innovation, has the following stages:

(i) Basic oriented research for developing a scientific know-how ;

(ii) Applied research for assessing the feasibility of scientific know-how ;

(iii) Design and Development for developing technical know-how out of scientific know-how ; and

iv) Product design and Tooling and Manufacturing processes for marketing the projects.

Technology Gap

One of the major tragedies of the world today is that there is a wide technology gap between developing and developed countries as a result of which 32 per cent of population produces 88 per cent of the GNP while the remaining 68 per cent produces only 12 per cent. It is precisely because of this that a developing country, needs not merely a Science Policy but

a Science and Technology Policy. Pt. Jawahar Lal Nehru, father of our science policy, once said, "My interest in science arises naturally from social consequences of science than science itself. We have to face major political, economic and social problems of our growing country and raising level of hundreds of millions of our people". The adoption of the Scientific Policy Resolution in 1958 was an important step in the recognition of the role of science and technology in economic growth and national prosperity. The resolution was a logical culmination of a series of steps taken since independence by creation of a national net-work of laboratories and institutes as well as expansion of facilities for post-graduate education and research in science and technology. All this was done with the explicit and implicit hope that these will act as agents for transfering benefits of science to society, both rural and urban. Pandit Nehru had doubts that the policy and the organisations may not be capable of delivering the good. In the 1965 Science Congress he said, "It is a fact that scientific research and its practical applications have not been well coordinated".

Functional Criteria

Examining the various aspects of this coordination and other functional aspects in an effective science and technology policy, we find the following criteria for a science policy :

(a) to what extent the importance of science is recognised and possible applications identified in general policy, thinking and planning ;

(b) to what extent is this recognition implemented for achieving socio-economic goals.

It is easy to see that the first component is concerned with the development of a framework for the management and support of the national scientific enterprise and with the selection and evaluation of substantive R. & D. programmes. This would include the strategy of resource allocation to various fields of education, research and extension on the basis of identification of social needs and priorities, the general direction of quantitative and qualitative growth of scientific manpower, the health and vitality of the National Scientific Community and diffusion of conceptual structures and methodologies and contents of science among general public and society. This is policy for science. The second stream, on the other hand, is concerned with the integration of the scientific programmes to socio-economic goals or other policy matters like choice and development of new technologies, defence R & D or problems of nuclear age, environment, etc. The question of technology development and diffusion is of primary importance in a developing economy where risk taking capacity of the capital is limited and competitions are restricted by tariff protection and as such diffusion does not occur automatically. The second stream is also concerned with the import and adaptation of technology for bridging technological gap, after proper assessment for suitable adaptation.

From above it is easy to see that functionally science policy should emanate from a solid confidence that science and the selected scientific programmes are capable of delivering the desired good and the programmes are oriented for ensuring that the good is delivered. The strength of a science policy depends primarily on this confidence and assessment. A scrutiny of public policy during the past three decades shows that this confidence has been lacking in many spheres of socio-economic activity and many times we depended on foreign collaboration and import of technology, even when our scientists and technologists could do the job. One can understand the need for foreign collaboration in the early stages of development of atomic energy or in the fields of Space and Electronics. But did we really need foreign collaboration for our river valley projects or for developing our steel industry, Bokaro being the last example? Or, did we need the kind of foreign collaboration we have taken for developing all the five Indian Institutes of Technology ? There are many other such examples. Let us not forget that the problems we are facing regarding the Nuclear Fuel supply to Tarapur by the USA are a legacy of the past. Some of our recent decisions regarding import of technology particularly in the field of fertiliser industry and heavy electricals only shows that even today, after thirty years of indigenous R & D, we have not developed enough confidence in indigenous science and technology.

There is, however, nothing wrong in importing and adopting foreign technology where local technology is not available, but while importing technology the country should ensure that it is an unpackaged technology in which the local scientists have a chance to adopt the technology to ensure indigenous supply of inputs, etc. And this policy should be consistent and business-like. The key to Japanese economic growth is a consistent policy of adaptation of a superior technology for manufacturing products on competitive lines for capturing the world market. For this, Japan has a balanced policy of expenditure on import and adaptation of technology, the expenditure being nearly equally shared between the two in all the sectors of the economy. But in India the picture relating to import and adaptation of technology in the different sectors has not only been unbalanced but is also highly inconsistent and confused.

Evaluation of the Policy

The criteria for assessment of the degree of success of the scientific policy in a developing country with planned economy are :

(a) How far science and technology programmes are linked or integrated to the socio-economic needs and goals ?

(b) How far the goals have been realised ?

(c) How far the returns are reflected in the performance of economy and in social performance ?

(d) If the results are not satisfactory whether reasons have been traced and corrective measures adopted to ensure better results.

It need not be emphasised that the performance of our science policy so far, on all these scores, has, indeed, been poor. Let us look at it in some detail in terms of facts taking into account our socio-economic goals. Our socio-economic goals and objectives relevant to our S & T Policy and plan as has been spelt out in the past, are broadly summarised as :

(a) application of science and technology for optimum utilisation of indigenous resources including human resources ;

(b) to build a self-reliant technology base for sustained economic and industrial growth ;

(c) to secure for the people of the country, both urban and rural, all the benefits that can accrue from the acquisition and application of science and technology and to fulfil their basic needs and to enhance their quality of life ; and

(d) to reduce socio-economic disparity among the people of this country.

Regarding E & D, there has been hardly any positive action in our S & T programmes so far. The socio-economic gap between the rural and the urban sectors is shamefully wide even today. The two sectors belong to different ages altogether. As a result, India today lives in a time frame of more than one century. While you can easily compare Delhi with one of the most modern cities of the world, some villages in Meghalaya or Nagaland belong to Eighteenth Century. Very few in these villages have seen an automobile or a locomotive. True, some villages in some other States have been adopted by some research laboratories under the integrated rural development scheme, but in many cases the villages selected are already developed. And none of the projects have yet come to a stage when the results can be pooled and monitored for application in other villages. The projects are, at best, still in the fact finding stage. Development and transfer of intermediate or appropriate technology for rural development including the development of improved inputs, process technologies and testing facilities for non-farm rural industries is yet a far cry.

Regarding the utilisation of natural resources, take the case of North Eastern Region of India. Most of the areas are out of reach by any mode of modern transport. Could our R & D programmes do something for them? Without the basic infra-structure of adequate transport facilities it is difficult to bring the natural resources in these regions into utilisation. More scientific method of soil conservation and irrigation and planning of crops in terrace cultivation would increase the agricultural yield immensely. Use of pine apple leaves for making hesians can develop into a very prospective industry. They make good insulators too. But where are the R & D and technology to develop competitive products? Very few of our R & D projects are based on techno-economic survey of the natural resources of a region.

Perhaps the most serious failure of our Science and Technology policy is seen in the gross under utilisation of the scientific and technical manpower in the country. According to 1971 Special Census figures, more than 20 per cent of science graduates and about 14 per cent of engineering graduates are unemployed while a majority of the employed are either under-employed or under-utilised. The distortion in the utilisation and employment pattern are primarily due to the fact that while, in anticipation of increased demand for this category of manpower for manning the process of technological development in the country, the corresponding educational facilities have been considerably expanded during past two decades, our development plans have failed to generate commensurate demand for them. When we realise that higher education in India is highly subsidised and the Government spends about Rs. 20,000-40,000 in turning out an engineering graduate and also a considerable amount on a science graduate, the magnitude of wastage becomes fully evident. We know that there is a constant drain of qualified scientific and technical manpower from India to developed countries.

The impact of our science and technology programmes on our economy in general and on manufacturing industry in particular, is equally disheartening. National Research and Development Corporation was set up for promoting technology transfer from research institutions to the industry. The value of goods produced from the processes licenced by NRDC to industries were only Rs. 10 crore in 1972-73. The GNP in manufacturing sector alone during the year was about Rs. 2700 crore. And the expenditure on R & D relevant to the industries was Rs. 200 crores. A recent study of R & D in India conducted by IAMR has shown that the industries hardly incur 10 per cent of the total R & D expenditure while national laboratories and agencies account for nearly 80 per cent of the total R & D expenditure. But for a successful technical innovation, industries should spend around four times the money spent in the laboratories. In the total R & D chain leading to a technological innovation mentioned above only the first two stages, viz. basic and the applied research efforts are typically the charge of R & D laboratories while the last two stages viz., Design, and Development and Tooling and Manufacturing are the responsibility of the industry. A break-up of expenditure shows that the last two stages consume approximately four times the expenditure on the first two stages. The situation in India is just the reverse meaning that there is no coupling whatsoever between the production floor and the R & D laboratories. The study showed that there is hardly any dialogue or communication between the R & D laboratories and the industry. The laboratories work in blissful isolation. Even in the public industrial sector the R & D programmes were far from efficient and optimal, and there is lack of proper coordination for pooling the efforts even within the same organisation. The basic problem with our Science policy is that Science and Technology effort including R & D have mostly grown in isolation. They are not integrated to the market and the users or to social needs. As a result there is a total absence of social demand or social accountability for the output from these programmes. The accountability then, is to an individual, may be to a Secretary or to a Department Head. The performance standard under this situation tends to get arbitrary and wasteful. And this leads to the problem of health of the scientific community and the utilisation of scientific manpower. The study conducted by IAMR on R & D has shown that there exists severe distortion in the utilisation of Science and Technology personnel in the R & D laboratories. The correlation between salary and education and experience is poor. A large proportion of Ph.D's are placed near about the lowest salary slabs. There are research laboratories having annual budget of nearly Rs. 50 lakh with none of its research output being utilised. It is difficult to expect that the career development in a situation like this will be performance oriented.

To sum up, Science Policy in India has never been well balanced or in good health. Many of the problems today are projections of the past. No piecemeal solution of the problem is possible. A balanced and business like attitude based on objective analysis is needed.

For using R & D for rural development, the problems should be identified at the area level, district level and state level through appropriate techno-economic surveys in which the R & D laboratories should also participate. This would help formulate time bound projects to solve the problems. For a balanced growth and for linking education with the problems of the society, the projects and the resources should be distributed evenly between universities and the R & D laboratories. Side by side effective extension or field

organisation should be set up for efficient transfer of technology. An effective interaction between scientists, administrators, extension services and the users should be constantly maintained. It should be remembered that the organisation plays a very important role in a development strategy and that adequate communication between the various stages and the participants is a pre-requisite to any good organisation.

Because of lack of market competition and non-availability of capital for risk-taking, the industry today, in general, is not interested in technical innovation or product improvement. This lack of confidence in indigenous technology is also another important factor in this regard. The scientific community today is by and large, misleading the public either by remaining silent to the political propaganda, or even sometimes supporting it. A proper diagnosis of the ill is much more important than passing on the responsibility to a third party.

An important aspect of science policy is resource allocation, coordination and sharing of expenditure between universities, research laboratories and the industry. A typical balanced distribution of expenditure in the three sectors would be 1 : 1 : 3. But in India today, about 80 per cent of the R & D expenditure are incurred in the R & D laboratories or agencies. As mentioned earlier, industry hardly spends 10 per cent of what is spent in the laboratory. R & D allocation to the universities is also comparatively very poor. This is very unbalanced distribution which has resulted from the fact that while research laboratories have grown, there has not been a proportionate growth in the funds for R & D. The industry as well, is not much interested in R & D. Hence all the expenditure has concentrated at the R & D laboratories. A scrutiny of the R & D programmes in the research laboratories show that the major part relates to basic or basic oriented research which could be easily done at the university at comparatively less cost because the universities have to maintain an infra-structure for educational purposes, and to a distinct social advantage because the students who are scientists in the making would have a greater opportunity to interact with the R & D programmes in the country. An added advantage would be that the additional funding to the universities would attract more talent to the universities which are entrusted with the very important task of maintaining the standard of higher education in science. In all the developed countries including the USSR, the universities play a key role in the R & D programmes. But not so today in India. □

Health and Floods

continued from page 23

field flush latrines or deep trench latrines for effective disposal of the night-soil and trenching or composting of the animal manure would minimise the fly nuisance. The vulnerable population may also be prepared in the art of community living in rescue camps so as to maintain the acceptable standard of environmental sanitation in camps.

Advance knowledge of the poetential danger to life and health hazards would bring about positive attitude in heeding to flood warning and the population will not offer much resistance for evacuation and accept immunisation voluntarily against preventable diseases. Additionally, such preparedness would also allay adverse psychological affects among the population exposed to the calamity.

While the State health authorities undertake the emergency medical and health care measures of the affected population, the State Administration should assist them by providing sufficient number of lorries/trucks, converted into improvised motor ambulances by installing stretchers and positioned at vulnerable hospitals, primary health centres and selected places for evacuation of the seriously ill and injured and expectant mothers in labour. Likewise boats, bullock/camel carts fitted with stretchers may also be positioned at selected places for use as rural ambulances for emergency use in floods. Light general service vehicles may also be provided for conveying Mobile Medical Teams to the flood affected hamlets in the interior.

Suitable buildings like schools, colleges, hostels community halls etc. should be pre-selected in the flood-prone areas for sheltering evacuated population. Basic facilities for maintaining optimum environmental sanitation such as field flush/deep trench latrines temporary urinals bathing cubicals, garbage bins, incinerators etc. should be provided in the Camp sites. The requisite field sanitary engineering equipment may be prefabricated and stock-pilled for installation at short notice.

Vulnerable medical buildings of primary health centres, taluq/Tehsil/Sub-divisional hospitals which are likely to get marooned in floods are required to be shifted at short notice into suitable alternate buildings, pre-selected and ear-marked by the local administrations for providing medical care to the disaster victims. Likewise, buildings for housing the new static first-aid posts and dispensaries should also be pre-selected and ear-marked for the purpose.

Cooperation of the State Branch of the Indian Red Cross and other voluntary relief organisations should be planned in advance for effective coordination of their activities in order to avoid duplication of relief and over-lapping of areas of activity.

Advance planning of practical and workable network of communications should be undertaken to facilitate effective coordination with the health authorities at different levels and other concerned departnements engaged in different relief activities.

Alternate sources of electric power supply to vulnerable hospitals, primary health centres should be planned in advance and provided in an emergency situation, if possible

Sufficient number of water tankers should be made available for supply of safe and potable drinking water whenever required. □

Marketing Efficacy of Small Industries

Dr. S. M. Jha
Freelance Journalist

WE, OFTEN, prepare sound literature in favour of small, tiny and village industries and make provision for sufficient administrative cum financial support for their all round development but who are going to buy the products made by them ?

The rich farmers do not want to purchase the products of small and village industries, whereas the poor are too poor to purchase them. Ultimately a large scale contraction is found in the marketing avenues of either the small industries or the village industries. The marketing avenue is contracted, production is contracted; consequently the units cost becomes high, the demand is also contracted and so on resulting in the formation of vicious circle. We need to break this circle. To meet this purpose, a constant market is a must, as selling is the sparking-plug of a country's economy.

Production for Distribution

Production is nothing in itself but only for consumption. The acceleration of production may not only be the efficient generation of distribution but its rapid mobilisation, so that the constraint of consumption would conveniently satisfy the need of today and the desire of tommorrow. The distribution of goods is a speciality within itself and the time-honoured marketing only may not generate the channels of distribution but a rationalised-producton-plan would be essential.

Mr. Latif is true to say, "rapid economic development means not only our ability to produce the goods but also see that it reaches the right places in the quicker possible time with least possible cost." Unfortunately, the Indian paychology is not reckoning marketing, to be an important weapon of commanding production behaviour and so different plans were not only stopped but the prospects for the coming generations are also blocked.

At this juncture of economic stagnation, optimal cum time-honoured marketing may only be the finest slogan. It may inject favourable nexus to be the marketing system. We need proper-mobilisation, rapid-convergence and time-honoured—utilisational that may all be practicable on the condition that marketing becomes the nerve centre of the dynamic production globe.

Although, we find little efforts in the sphere of rationalising the marketing efficacy but not to discount rather to figure the euphoria, it would be worth-noting that nearly fifteen years ago a centrally sponsored scheme, Rural Industries Projects, was started. The decision to establih a separate wing in the National Small Industries Corporation, for extending marketing supports to the small Industry's products may also be efficacious to frame a sound milieu for existing cum incoming producers The performance of NSIC, in the field of marketing, is found to be satisfactory, as sale of brass craps amounted to Rs. 7.9 crore (during 1977); thus exceeding the target fixed for sale by Rs. 0.8 crore. The NSIC has also helped the small units to secure 4547 Government contracts worth Rs. 47.0 crore, compared to the previous year's (1976-77) 5081 contracts worth Rs. 57.4 crore. The Khadi and Village Industries Commission has also been given wide financial and administrative support to activise the marketing channels but really they depend on official buyers for their survival. We find a phenomenal increase in the number of small units i e. 460 per cent; but the growing incidence of sickness among small scale industries, common in almost all States, may really be an unfortunate phantom.

The vital task is to make the sick units more healthy, so that entrepreneurs may practically be more prosperous. We have to adopt the up-to-date marketing techniques, something in light of Henry Ford's philosophy, as producers are basically responsible to create their own markets.

In an inegalitarian agrarian economy like India, responsibility should not only be thrown upon the shoulder of entrepreneurs and the Government should also be accountable to reserve certain items for small and village industries; so as to fight the growing competion and the stage of sickness be kept far behind the easy access. Besides, the Government should also be liberal while taxing the products of small and village industries. The much publicised Super Bazars, in particular, and the massively propagated other agencies, in general, are said to be surrounded with problems of mis-management, stock-piling of luxury items, alleged misappropriation by employees, high rates of Sales and Income Taxes etc. The problem of bureaucratic bungling may practically be a vital cause for the eventual liquidation of small and village industries.

The story of establishing KALPLATHA in Andhra Pradesh and APNA BAZAR in Bihar may testify that neither the previous Government nor the present Government is able to make any effective headway. They resorted to ad-hoc measures in the name of pragmatism. It may not be a matter of jubilation rather than a matter of alarm, not only to the small or village industries but, practically, to the entire segments of national economy-transformation.

Recent Efforts

The decision of the All India Handloom Board to set up a Handloom Bank, at national level, to ...

chase raw materials to supply to the weavers, and procure finished goods from the weavers eliminating the middle level dealings may really be an encouraging step. The weavers may now get marketing support and other incentives to accelerate production and mobilise distribution. The creation of buffer stock of yarn to meet the requirements of weavers may now provide more guarantee to the related entrepreneurs, and a standard work for cost and quality may also be expected. The Board should also be sentient for quality control; so as the current year's (1978-79) target of export, of Rs. 276 crore may smoothly be achieved. The Board is also interested in modernisation and there is a proposal of selecting 2000 handlooms every year for this purpose. At present, about 5 crore people are engaged in the handloom industry all over India, and efforts should also be made to hold them as the permanent customers of their own products.

Mini Super Bazars

The 'Mini Super Bazars' proposal is to encourage residents of each housing colony in urban areas to set up distribution centres. It would be of immense benefit, if extended to the semi-urban areas. This would help the integration of product mobilisation which may enlighten the gigantic task of sales promotion.

Industrial Workshops

There is a proposal in Bihar to prepare a scheme for introducing industrial workshops in each of the 11250 panchayats of the State. The workshop is meant to take stock of the availability of raw materials, in their own areas, besides extending the marketing support and other facilities. The State Government is exploring the feasibility of setting up a Central Purchase Organisation and it is believed that this orgasinsation would purchase the products of the small and village industries. The proposal of the Government to purchase the products of small and village industries, for its various departments, would also encourage the entrepreneurs towards production-acceleration vis-a-vis employment—generation.

The crux of the problem is related to the proper execution of the development cum employment—oriented scheme The bureaucracy that has to execute these policies should have aptitude for field work rather than desk-work. Measures taken should be multi-concerned, diversified and conventional-cum-pragmatic; otherwise the results are and will be lagging far behind the desired target. A state with the largest number of consumers would have been able to cultivate sound avenues for marketing the products of small and village industris but unfortunately things are yet to move on right track.

Inter-sectoral Co-operation

Establishment of small affluent Islands, surrounded by a vast sea of backwardness, may not be the desired goal for economies like ours. We need to establish a sound relation between the small and big industries vis-a-vis the rural and urban economies. Creation of healthy environment and elimination of sick-nexus may only be feasible while both the big and small industries continue to expand and create market, not as a competitor, but of course, as a mediator. Dr. Brahmanand may be true to say, "the large and the small are mostly complimentry and the latter is dependent upon the former both for demand and supply." According to the 1972 Census of Small Industrial Undertakings, Dr. Hashim finds out that 79 per cent of the small industrial sector gets its inputs from the large manufacturing sector; most of these depend upon steel industry and only 12.5 per cent of industries depend for inputs upon agriculture. Thus, we need proper co-operation and coordination between the large and small industries. A plan for inter-sectoral cooperation has recently been prepared at the initiative of our Prime Minister and it is to be started from Match Indusrty. "In the context of our economic policy and industrial policy resolution, I have been considering the possibility of decompartmentalising the present approach to village industries, small-scale industries and large-scale industries." The observation of Prime Minister, Shri Morarji Desai may establish an inter-sectoral co-operation and marketing avenues may extensively be enlarged.

The socio-economic stratum of our country is found to be not impressive and so we have also to put emphasis on the much publicised District Industrial Centres, reservation of products for small and village industries and an optimal command on big business multinationals. The concept of organising the consortia of small units may also not be ruled out ; as enough expertise may be expected and the problems relating to finance and licence may smoothly be solved. If unts like Super-Bazars, Mini Super Bazars, rural agencies, consumers' cooperative and canteen all work in common areas; supply of raw materials, supply of technical know-how, production planning, processing and quality control, market development and distribution; the inter-sectoral relation may well be established. But the Government will have to play a major supportive role, by providing fiscal incentives, doing away with necessary levies and physical constraints.

Demand Generation

The gigantic task is related to the generation and distribution of income between the different deciles of population, besides the geographical space.

Even the high density of population may not be helpful to propose such schemes that would augment demand, accelerate production and generate employment. The proper solution may be to deepen the stratum of public sector investment, so as the private sector investment may extensively be encouraged and optimal command may wisely be maintained.

It may really be an urgent need to establish more specialised agencies that would support and assist the marketing behaviour of village and small industries. Sound projection of demand may practically be more

Contd. on page 32

Tuticorin Port : A Gateway

T. G. Nallamuthu
Correspondent ; All India Radio

TUTICORIN, the tenth major port in the country and the second gateway to Tamilnadu, was commissioned with the formal inauguration of the Tuticorin Port Trust, by the Union Minister of State for Shipping and Transport, Mr. Chand Ram. Its formation with the merger of the minor and major ports at Tuticorin, marks yet another landmark in the economic development of Tamilnadu. When in full swing, the port will open up the hinter land to progress and prosperity and mark the completion of the golden triange— the triangle that means life and cheer for the 4.5 crore people of Tamilnadu.

Tamilnadu's economic development has been lopsided till today. Madras and Coimbatore regions stole the march in industrial growth, while the central districts took to agriculture with a sprinkle of industries. All other in-frastructure development, including power, remained concentrated near Madras, Neyveli and Coimbatore (Nilgris), with the result that south of the Vaigari river, remains neglected. With the setting up of the Southern Petro-chemical complex and the Heavy Water Plant and the launching of the Thermal power plant at Tuticorin (the first of the three 210 MW units is to be commissioned shortly), a solid base was being laid to develop the hinter land consisting of Tirunelveli, Ramanathapuram and Kanyakumari districts. All the projects and the development of other major, medium and small industries, including salt that comes naturally to Tuticorin, depended to a large extent on the Tuticorin port. SPIC has to get its crude, the thermal plant and other industries in the area, their coal, and in turn the products of the area including salt, cement, and sea products have to move out to other states. It is therefore a pleasant news that Tuticorin port has been recognised as a major port and, the centre and the Tamilnadu governments are taking all steps to modernise it.

Tamilnadu has had a rich maritime past. It came into its own during the freedom struggle with V.O. Chidambaram Pillai launching India's first swadeshi steamship company in protest against British imperialism.

Tirunelveli district and its adjoining areas with rich mineral potential remained backward for want of a fillip. The Tutocorin port has been in existence from the 15th century. Though small ships of the olden times were plying from Tuticorin to Madras, Colombo and China, the port was first surveyed only in 1842 and again in 1897 and 1912. It was in the year 1866, that the first primitive wooden jetty of 30 metres long was constructed, in 1895, a pucca pier was constructed and in 1899 the main line of the South Indian Railway was extended to the quay. As a result of the various development schemes undertaken by the authorities, the old port registered a steady growth and became the largest intermediate port in India, handling over one million tonnes of cargo.

Prior to the enactment of the Tuticorin Port Trust Act, 1924, the administration of the port was under the control of the then Presidency Port Officer. With the enactment of this act, the port was being administered by the Tuticorin Port Trust Board. With the facilities available at the Minor port, the steamers are anchored in open roadstead, about 6 kilometres away from the port and the cargo handling is taking place by means of lighterage vessels plying between the ship's anchorage and the minor port.

Birth of the Major Port

With very little infrastructure around, a vicious circle was building up with the hinterland steeping in poverty and backwardness. Several measures like power and port development, were thought of to break this cycle and bring prosperity to this parched land. The intermediate Ports Develpoment Committee constituted by the Government of Inda visited Tuticorin in 1958 and recommended the development of a major port at Tuticorin during the year 1960. An initial allotment of Rs. 5 crore was made in the Third Five Year Plan. About forty one crore rupees have been incurred so far, while a few more facilities remain to be provided.

The major port is an artificial deep sea harbour with rubble mound type parallel breakwaters, north and south, each of length 4103 metres and 3888 metres respectively, projecting into the sea 1275 metres apart, with an entrance of 152 metres width providing a tranquil sea basin of 960 acres. The main wharf is 877 metres long and it can accommodate four ships, two of 168 metres in length and the remaining two of 192 metres. The berths are located in the natural deeper waters about 3000 metres from the shore. The link between the wharf and the shore is by means of road and railway system laid over the reclaimed approach arm of 61 metres width adjoining south breakwater. The harbour is served by a dredged approach channel of 1400 metres long and 183 metres wide.

All the shore and off shore facilities contemplated in the sanctioned project estimate have been completed and the port has been thrown open for traffic. The capital dredging along the approach channel has been partially completed.

The port is presently functioning with an improvised temporary oil mooring berth at north breakwater, primarily to meet the requirements of the SPIC fertiliser complex. The government of India sanctioned an estimate of Rs. 97.5 lakhs for the construction of a permament oil jetty. This jetty is designed to cater for the oil tankers of 12,000 DWT to 40,000 DWT. The construction is in progress and is expected to be completed in three months.

To handle about 18 lakh tonnes of coal required by the Tamilnadu Electricity Board for its 630 MW thermal Plant, and about 6 lakh tonnes for the consumers, an exclusive coal berth has been sanctioned at an estimated cost of Rs. 297 lakhs. The coal jetty

has been designed to cater for 50,000 DWT colliers and the work has been taken up for execution. The Tamilnadu Electricity Board is providing shore reception facilities and conveyor system to handle coal at the rate of 2000 tonne per hour. Poompuhar shipping corporation is gearing up herself to undertake the the coastal transportation of coal from Haldia to Tuticorin.

The Government of Tamilnadu and the central government agreed to the integration of the existing minor port and the major port of new Tuticorin into a signle major port, for which one Port Trust under the Major Port Trusts Act, 1963 would be constituted. It was also agreed that the government of Tamilnadu would meet by means of a loan to the port trust, half the deficit that would accrue to the Port Trust in the intial years, by repaying the loan from the net surpluses generated in subsequent years, to the extent of 50 per cent of the surpluses or the quantum of the loan, whichever is lower and the other half will be accommodated as a loan from the centre to the port trust.

Economy of the Port

The draught available at the port at present is 8.24 metres during the low tides and 8.85 metres during high tides. The draught will be improved to 9.14 metres on completion of the capital dredging. Because of this only smaller and medium type vessels can call at the port. Bigger ships can call at the port only when the draught is doubled. But we will have to wait till the traffic also increases more than twice its present size. This brings us back to the vicious circle and the main question of the general economic development of this region.

The district is endowed with good deposits of limestone, graphite, granite stone, garnet sand, gypsum and salt bittern. A proper exploitation of the estimated 57 million tonnes of lime stone and 50,000 tonnes of gypsum in Sankaranayanar Koil, Kovilpatti, Tirunelveli sea bed in the district of Tirunvelveli alone can result in a few more cement units and this will meet the present scarcity in the country. This will also help increasing the return traffic through the port.

The salt industry has also a very great scope in Tuticorin and along the Tirunelveli coast. This area meets a sizeable share in the domestic requirement. In Tamilnadu the salt units are in the private sector and their proper development will result in largescale employment. The Tamilnadu Government has already set up a corporation for the purpose and is moving fast in this direction. This will help increase salt outgo through the port and contribute to reverse traffic.

The third major area of economic development around this region and stretching on hundreds of kilometres of coast line on either side of Tuticorin is fisheries. There are about 20,000 catamarans and few motor boats and over 2 lakh fishermen dependent on the sea. A proper exploitation of the sea with storage and canning facilities could result in a large export of sea products through the Tuticorin port.

Further, the power development in the area is likely to spin off a lot of industrial activities. Already there are several textile units in the area. If the state government succeeds in persuading Kerala to divert a part of the west flowing rivers emptying their riches into the sea, this drought striken area could become prosperous with a hoast of consumer industries. There is already a plan to set up a super thermal plant at Tuticorin taking advantage of the oil jetty. This will come true with the increasing demand for oil and oil products. The centre is also considering the demand for conversion of the Tuticorin-Tirunelvei-Madurai-Karur railway line. The Tamilnadu government has recently taken up once again the question of Sethusamudram project. With goodluck, if the project it implemented, it would spin off economic development in this area on a great scale with a lot of traffic now going to Colombo shared by Tuticorin. This will be the first port of call on the eastern coast. With frequent congestions in our major ports and ships waiting for months to clear their cargo the government and consuming public would prefer smaller ports like Tuticorin. Moreover the coastal shipping facility is likely to increase following the chocking of the railway lines with increasing traffic. Then the best port with efficient handling facilities and a dedicated and intelligent labour force will naturally attract attention and traffic. Tuticorin port has all these qualities. The labour force in this port has already set a national record with the manual handling of 4360 tonnes of wheat in a day. This augurs well for Tuticorin port as well as the economy of Tamilnadu, especially the southern districts of the state. This then will mark the completion of the golden triangle—with northern, western and southern districts sharing equally in the economic prosperity of the state. □

Marketing Efficacy of Small Industries

Continued from page 30

instrumental to ensure sound distribution and so our ultimate task should be to endeavour place-honoured projection cum time-honoured execution. The Karve committee, established in 1955, had recommended to reserve products for small industries but a little is found, for reservation, as yet. It had also been recommended to expand marketing facilities and to maintain price differential but the realities are far behind expectation.

A constant market may practically be more exhortative; so as to remove stagnation, accelerate production and maintain coordination. The fan fare and promises of establishing small and village industries by investing a major share of development—outlays may only be judicious; while proper avenues are ransacked. consumption habits are maintained, competitive capacity is grown up and price differential is arranged. □

BOOKS

Garment Exports

Garment Exports and Practical Guide *by G. S. Sharma; U.B.S. Publishers and Distributors Ltd., 5, Ansari Road, New Delhi; Pages* 176; *Price Rs.* 35.

HERE is a book which holds you by the finger and takes you step by step on the garden path, from rags to riches. It covers almost all aspects of soliciting, designing, packaging and exporting readymade garments to all parts of the world.

The author says in introduction, "for India's garment exports, sky is the limit With strong textile base and plenty of cheap labour, this country has all the advantages to become one of the major clotheirs of the world. It is no secret that the textile industry in the developed countries is in a bad shape. The labour wages are most prohibitive and the trend is to vacate the labour-intensive fields for developing countries like India".

To support his argument with facts and figures, he points out that readymade garment exports jumped from a mere Rs. 17 crore in 1971-72 to Rs. 36 crore in 1972-73, Rs. 59 crore in 1973-74, Rs. 102 crore in 1974-75, Rs. 191 crore in 1975-76 and Rs. 250 crore in 1976-77.

The author surveys the world scene in fashions and fabrics and lays down a 21step formula giving complete details of the garment export industry. This formula deals with items like credit facilities, inspection and even packaging. "In the sale of garments, packaging has assumed such a significant role today that it has become a potent weapon of selling", says the author. Deploring the poor quality of packaging in India, he quotes a UN study pointing out that developing countries annually lose "some 30 per cent" in their export earnings because of inadequate and faulty packaging.

At places Mr. Sharma has become prohphetic. Emphasising the role of mechanisation in garment production he points out that an Indian worker given all the mechanical facilities could produce only about 22 shirts as against a British worker who manufactures 32 shirts a day under similar conditions. He speaks of spray techniques for laying and cutting, computer controlled machines for sewing and grading patterns, and machines with photo-electronic eye. He thinks that laser beam might be used for bulk cutting, and in near future sewing might be replaced by welding.

He surveys the fashion-scene the world over in a historical perspective and mentions important fashion shows in Europe, America and Australia. He gives brief notes about "world's celebrated designers" like Pierre Cardin, Christian Dior, Gabriel Chanel, Kansai Yamato, Halston, Mary Quaint, and India's Star designer—Walter Johnson". Speaking about fashions, Mr. Sharma tells us, "In the 1920's 'flapper' style first bared woman's arms, shoulders and even knees to some extent. But the intention then was not erotic, the exposure of these parts probably emphasised woman's urge for emancipation and youthful care freeness In the 1930's sex entered dress and the intention of uncovering certain parts of the body was erotic......in the 1960's.....American and English youth expressed their lust for life in a variety of garments with cut-out or see—through details. Paper and cellophone dresses were in fashion.....At the end of 1960s' garment began to be removed almost in their entirety and women appeared at highly fashionable parties dressed not in clothes but in highly decorative body paints".

There is hardly anything the author has left to imagination. He sees to it that the prospective entrepreneur is able to ship his goods safety. And the last chapter deals with all the details about bill of loading, insurance, customs, invoices, GRI and VP/COD forms, Where necessary, the addresses of business houses from where machinery and other equipments could be obtained have been mentioned. There is a glossary of export abbreviations, technical terms and annexures indicating a long list of documents to be filled in at various places.

Baldeo Sahai

Indian Economy

Indian Economic Development—Retrospect and Prospect *by Dr. Shrinivas Y. Thakur ; Published by Sterling Publishers Pvt., Ltd., AB/9, Safdarjang Enclave, New Delhi* 110016 ; *First published* 1978 ; *Pages* 180 ; *Price Rs.* 50.

THE main aim of this book, as observed by the author, is to work out an ideal growth path for our country for the next decade or two. A rider is added to this by saying that it is extremely difficult for anyone to throw light on all aspects of the development strategy which are essentially interlinked. The author, therefore, proposes to "provide building blocks for a development edifice which itself has been in the stage of evolution."

The analysis of growth in India's national income from the different sectors over the Plan periods reveals that the strategy of Indian economic development has largely misfired. Economic planning is said to have failed to bring to the masses, in both rural and urban areas, the desired economic liberation. The major thrust of the author's prescription lies in undertaking programmes which will incorporate a wide variety of measures aimed at agricultural modernisation and rural transformation. Further, he would like that "the accent of future development strategy should not be on development of agriculture but also that of rural economy as a whole."

It is also observed that a major bane of Indian planning has been that it is oriented towards the development of heavy industries and urban areas. It is, therefore, suggested that emphasis in the future planning strategy needs be shifted from development of heavy industries to consumer goods industries. This will avoid strengthening of the present dual economy in the country.

The book contains cliches and the oft-repeated general prescriptions as if they are radical planning strategies of which none is aware. The author fails to appreciate that his suggestions are basically along the same lines which he is criticising in this book. He would have rendered a service if some bold and imaginative ideas had been given. The book miserably fails in its aim though its value would lie in highlighting the planning shortfalls.

Navin Chandra Joshi

The Indian Rupee

The Indian Rupee *by M. M. Kothari, Chaitanya Publishing House, Allahabad,* 1978, *Pages* xii+200, *Price Rs.* 30.

MONETARY economics is highly complicated and extremely abstruse. Applied to the behaviour of a national currency, it makes the task of a beginner very difficult. Such a study however could be rewarding in revealing many hidden dimensions of the economic system on whose clear understanding effective measures could be introduced for achieving lasting results. From this standpoint, the publication of *The Indian Rupee* by Shri M. M. Kothari is most welcome. In this book, the author has assumed the ambitious task of tracing the changing status of Indian rupee in the nation's dynamic economic adjustment efforts.

The story of Indian rupee takes the reader back to the days of Shershah Suri who substituted the then existing currency called 'tanks' with rupee and introduced its minting. In 1542, when the Indian rupee was introduced it weighed 179 grams of pure silver. When the East India Company adopted it for its transactions inside the country, it changed its bullion content to 180 grams of 11/12 fine silver. Since then the Indian rupee played an important role in the changing relationship between the United Kingdom and India. J M. Keynes wrote about this relationship in his book the *Indian Currency and Finance* in 1913. The questions relating to various forms of gold standard attracted attention of economists during the inter-war period. At that time, the Indian rupee acquired great significance because of close political and trading partnership between the United Kingdom and India The par value of Indian rupee was indicated in terms of the pound sterling. The situation radically changed after independence. But the monetary link continued long afterwards. The United Kingdom devalued its currency in 1948 and India followed it Developments in international economic relationships altered the close linkage between the two countries. Indian devaluation of 1966 was induced by its own compulsions Mr. Kothari having discussed the main causes of 1948 and 1966 devaluations, analyses the Indian economic situation which finally led her to decide the par value of Indian rupee in terms of a basket of international currencies.

The ten chapters of Mr Kothari's book, besides an appendix on Rupee-Rouble Controversy, discuss the theoretical implications, historical background, national and inter-national repercussions, and realignment of the Indian rupee with international currencies. In discussing the problem, Professor Kothari has gone into different aspects of the economic system and has given ample data to indicate the impact of devaluation on domestic price fluctuation, changing pattern of international trade and the role of external assistance in overcoming the foreign exchange shortage of the country. He rightly stated that the devaluation is intended to restore the country's competitive strength lost as a result of inflation This is the core of devaluation. Under the Indian conditions, this goal could not be achieved Exports declined in the immediate post-devaluation months, the contracts entered during the period prior to devaluation were revised wiping out gains of devaluation ; draught conditions in the country restricted the supply of export goods, while there was slump in international prices of many commodities like sugar, tea, etc. Having listed the various export promotion measures, the author concludes that the success whatever achieved was not entirely due to devaluation but to the efforts put forth by the Government of India and the general resurgency among the Indian traders. This showed that the devaluation required too much preparation and home-work to make it a success.

Mr. Kothari has done a valuable work on an important topic with abundant quotations from eminent economists which would certainly be useful to aspiring undergraduate students preparing for their examinations.

--Bipin Behari

A Case Study

Changing Farm Production and Organisation in Developing Agriculture -- *M. B. Desai and S. K. Varma Manager, University Publications Sales Unit, M. S. University of Baroda, Palace Gate, Baroda—Rs.* 103.

THE book is a case study of the impact of the developmental effort in agriculture in Surat district of Gujarat during the period 1967 to 1972 and is the outcome of a PL 480 Research project sponsored jointly by the Govt. of India and the U S. Department of Agriculture Initially the project was for five years.

In the first two chapters information of all sorts having a bearing on economic development with agricultural bias has been collected in respect of the district with 13 talukas and 10 selected villages out of a total of some 1280 villages in the district. Nine chapters are devoted to family holdings, size of economic and operational holdings crops and production, assets structure, farm resources and financial data of selected cultivators—15 chosen from each of the 10 selected villages.

The note on research methodology at the end of the selection of the villages was purposive and not by random sampling. One of them is a tribal village although eight talukas comprise the tribal area. Four villages from one taluka alone represent dry farming with cultivation of cereals as dominant system. Only one, however, represented dry farming with dominance of each crop cultivation and four villages, irrigated farming Fifteen farmers from each village were chosen on the basis of stratified random sample after a census of all the families in selected villages. Since the purpose of survey was to record agricultural change, families not owning land were eliminated and the rest were grouped in four broad deciles. A certain weightage was assigned to different size groups.

The voluminious data collected on the above basis did not yield easily to correct scientific analysis and proper interpretation and in the chapter on "Research finings" mention has been made of contradictory manifestations. Although the authors have attributed them book, however, provides information on changing pattern of farm production and rural economy in the aforesaid localities of Surat district to the research workers and planners. It also sets the pattern for similar intensive studies in other areas of the state to help speed agricultural development. The book would have surely served better purpose if the data were collected on the basis of usual sampling methods.

Dr. A. K. Bhattacharya

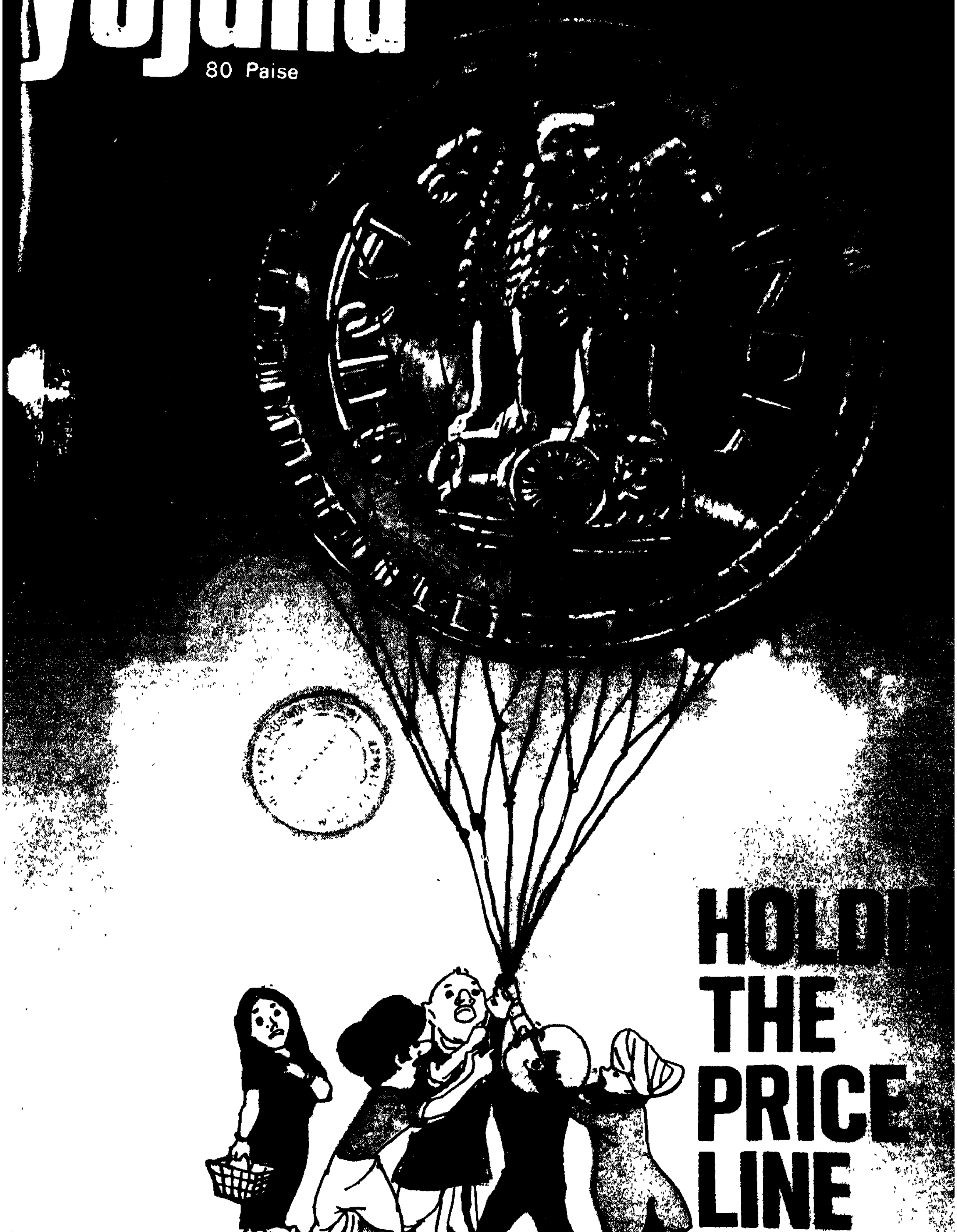
Regd. No. D(D)-15[illegible]

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi 110064 and Published by the Director, Publications Division, Patiala House, New Delhi 110001

OL XXIII/13 16 JULY 1979

yojana

80 Paise



OUR ACHIEVEMENTS

India's Exports up by over Three per cent

INDIA'S EXPORT went up by about Rs 150 crore in the first eleven months of 1978-79 over the corresponding period of the previous year, registering a 3 1 per cent increase. Provisional figures placed the total exports at Rs 4938 crore. In April 1977 February 1978 they were Rs 4789 crore

Exports in February 1979 are provisionally placed at Rs. 393 55 crore registering a 13 2 per cent rise against February 1978

IFFCO's Record Distribution

A RECORD QUANTITY of 1 83 lakh tonnes of fertilisers valued at Rs 63 90 crore were distributed to the farmers by the Cooperative Federation through its 3,000 sale centres during the financial year ending March 1978

The highest fertiliser distribution through Cooperatives in the past was 1 27 lakh tonnes valued at Rs 44.52 crore during the year 1976-77.

Tribals on the March

THREE thousand tribals and harijans were benefited under a special cocoon production programme in Raigarh district, Madhya Pradesh It has been taken up to provide employment to these people The programme yielded an additional income of Rs 8 lakh to its beneficiaries Several cocoon training centres were opened in the villages where 1500 tribals were trained in the production of cocoon During the Sixth Five-Year Plan additional 15000 tribals and harijans would receive benefits under the various schemes of Kosa industry in the district

As many as 830 small industrial units were opened in the district during the last financial year under district industries centre scheme, which played a significant role in their establishment by providing both financial assistance and technical guidance. These units employed 1652 jobless persons The promotion of small and cottage industries has given opportunities to tribals and harijans and they opened 213 small units during the year.

Kalpakkam Generator Commissioned

THE FIRST 236 00 KW turbo-generator of the Madras Atomic Power Project at Kalpakkam has been commissioned. The atomic Power station is now in an advanced stage of construction all nuclear equipment having been installed.

Rise in Paper Production in Gujarat

THE PRODUCTION of paper and paper bo... in Gujarat has gone up from 29,000 tonnes to almost 41,000 tonnes during 1973-77 quinquennium A phenomental growth is achieved by this industry in Gujarat during recent past and a capacity of 1 12 lakh tonnes is set up Six more units with total installed capacity of 12,000 tonnes are under implementation.

Out of the aggregate capacity of 12.4 lakh tonnes already created or under implementation in the State, capacity covered by Gujarat State Financial Corporation assisted 32 units amounts to 94,000 tonnes. They cover 76 per cent of the aggregate capacity built up in the State

The GSFC has sanctioned financial assistance of Rs 398.68 lakh for development of paper industry in the State.

BHEL Develops Indigenous Bushing

TRANSFORMER DIVISION of BHEL, Bhopal has successfully developed, manufactured and tested 24kV, 10000 Amp Porcelain bushing This is the first time in the country that such a high current porcelain bushing has been developed. This bushing is suitable for use on generator transformers for 200/210 MW generating sets.

Presently these bushings are being imported and indigenous development of this bushing shall result in saving of foreign exchange to the tune of Rupees Four lakh annually. The bushing is considerably cheaper when compared with the landed cost of the imported bushing.

The bushing has been designed, keeping in view that all the components can be manufactured indigenously, eliminating the dependence on imported items Porcelain insulator for this bushing has been especially developed in India

Industrial Output up

INDUSTRIAL production in the country rose by 7 8 per cent during the first 11 months of 1978-79 as compared to the same period in the previous year.

The average index of industrial production which was 131 4 in 1976 and 138 3 in 1977, reached 147 7 in 1978 It reached 160.4 in December 1978 and according to the quick estimates reached 181.3 in January 1979

The major items which showed significant increase in production in the first 11 months of 1978-79, over the corresponding period in 1977-78 were: aluminium—19 5 per cent ; Zinc—47 6 per cent ; Sugar 35 9 per cent , Vanaspati—19 7 per cent , motor cycles—32 5 per cent , diesel engines—36.55 per cent

The generation of power went up by 12 6 per cent during the year and the daily generation reached a new peak of 313 07 million units on March 27.

YOJANA

Volume XXIII Number 13
16 July 1979
25 Asadha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. Telegraphic Address: Yojana, New Delhi. Telephones: 383655, 387910, 385481 (extensions 402 and 420) Circulation: Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription: Annual —Rs. 18. Two Years—Rs 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Year—£6.30 or $ 12.50 Single Copy—£0 12 or $ 0 25

Editorial

Production-cum Distribution System

AT A time of rising prices when most of the people are keen to have their article for daily consumption at a reasonable price, the massive scheme of public distribution of essential commodities launched from the first of this month is bound to attract the attention of innumerable consumers. They will be looking for the distribution centres as these begin to come up one after another. For the vulnerable sections of the community, who cannot agitate for newtralisation of prices through higher dearness allowances, revision of pay and grant of bonus, the scheme will be truly beneficial if it can live upto the expectations it has aroused.

As adopted, it is a national scheme for action in which the Planning Commission, the Central and State Governments are deeply involved. It is more than a distribution plan. The operations involved in the scheme are production, procurement, storage and distribution About 3½ lakhs of outlets will be needed to cover more than 65 crores of people, each distribution centre being allotted to cater by and large a population of two thousand. The articles or commodities to be sold at a fair price include a variety of items like tea, coffee, matches, toilet and washing soaps, exercise books for students, cheap cloth and kerosene in addition to foodgrains. It is hoped that by the end of this year the system will be in operation all over the country.

The public distribution system to the extent it has been operated so far has been more or less on an ad-hoc basis to meet sudden scarcity conditions. The new scheme will be given a permanent footing, woven into the structure of market operations. For the first time the Central and State Governments have accepted the responsibility of making certain essential articles available to the common man at a reasonable price. Disparity in prices of commodities in different areas will also be removed to the extent possible Salt selling at 30 paise a kilo in Delhi will not sell at about Rs 4 in Nagaland or Mizoram as has been the usual so far.

The scheme, a truly mass-oriented one, will have to overcome many obstacles in its way. As prices will be chasing the goods in an inflationary situation, large-scale subsidy will be needed to keep the prices within the reach of the consumers. A good deal of extra expenditure will have to be incurred by the government. Steady production, procurement and continuous supply of commodities will present a stupendous problem requiring financial, managerial and administrative competence of a high order to make the system work. Particular care will have to be taken to ensure that in the name of public distribution, commodities in short supply are not procured by the government for the consumption of a favoured few in select areas while the vulnerable sections, by and large, have to depend on the open market where exhorbitant prices prevail. If the public distribution system is to achieve the professed social and economic objectives, it stands to reason that only foodgrains, imported edbile oils, cheap cloth, and kerosene are offered for sale. The distribution centres or shops, registered with the government, must not repeat the performance of Central Government Consumer Cooperative Stores where articles of daily use are always in short supply and the attention to the consumer is minimal. If public [illegible] for a public distribtion system is not forthcoming in [illegible] measure, it is only natural. The system has yet to [illegible]

Report on Evaluation Study of Small Farmers, Marginal Farmers and Agricultural Labourers Projects

Programme Evaluation Organisation
(Planning Commission)

THE CENTRAL Sector Schemes of Small Farmers Development Agencies (SFDA) and the Marginal Farmers and Agricultural Labourers Agencies (MFAL) were included in the Fourth Five Year Plan with the specific objective of ameliorating the economic conditions of small/marginal farmers and agricultural labourers and to bring them into the mainstream of national development. A sum of Rs. 103 crore was allocated for this purpose in the Plan. The Schemes were introduced gradually on a pilot basis in certain selected areas of the country from 1970-71 onwards.

In 1973 the Programme Evaluation Organisation was asked to conduct the evaluation of these schemes. The main objectives of the Study were to examine :

(i) the nature and content of the programme taken up under the schemes ;

(ii) the organisational and operational aspects of implementation of the programmes; and

(iii) the impact of the programmes on small/marginal farmers and agricultural labourers with reference to the increase in their incomes and availability of more employment opportunities.

Sample Design

The Study was confined to SFDA/MFAL Projects which had completed two years of their operation. Of the 45 such SFDAs and 32 MFALs in June 1973, 21 SFDAs located in 17 States and 32 MFALs functioning in as many States were selected for the Study in consultation with the Ministry of Food and Agriculture. The names of the selected Projects are shown in the Annexure. A multi-stage sampling design was adopted with Projects as the first stage and villages (where programmes had been implemented) and beneficiaries of the programmes as the second and ultimate stages of sampling respectively. Table I shows the number of Projects, villages and beneficiaries covered by the Study.

Besides canvassing the beneficiaries, detailed information was collected from each State and Project Agency covered by the Study as also from financial institutions functioning within the selected Project areas. The field work was taken up during 1974 and was completed in early 1975.

Selection of Project areas : The discretion in regard to selection of areas for introduction of schemes was left to State Governments but they were advised to make the selection keeping in view the adequacy of *the population of the target groups, existence of infrastructure (e.g., co-operatives) and compact the area. The Study shows that selection of a[...] many cases was not in consonance with the gui[...] issued by the Department of Rural Develo[...] Ministry of Agriculture and Irrigation. In nearly [...] cent of SFDAs, the population of target groups [...] less than the target set for the coverage (50,000 [...]lies). Most of the Project areas were also poorly s[...] by co-operatives. The geographical area of the [...]jects varied from 740 sq. kms. to nearly 17,40[...] kms. and at times extended over two districts.*

Administrative set-up : The administrative set-u[...] Agencies has generally not been effective. The pe[...]mance of Governing Bodies has depended upon [...] degree of interest taken by their Chairman, who [...] normally the head of the district administration. ([...] about 55 per cent of them held regular meetings. [...] efficiency of the Agencies was also impaired eithe[...] delay in appointment of the executive staff or [...] frequent transfer. Most of the Agencies remained [...] a fairly long period without Assistant Project Offi[...] who were subject specialists. This retarded the for[...]lation of programmes and their efficient execution. States were required to strengthen the extenstion s[...] who were to serve as the main media for actual con[...] with the target group. But in nearly 71 per cen[...] the Project areas no measures had been taken [...] strengthen them.

The arrangements envisaged at the State level [...] ensuring supervision, co-ordination and direction h[...] generally not worked. With the execution of [...] States, nowhere the State Co-ordination and Rev[...] Committees met regularly or as frequently as [...] desired. In fact, in some States they met once or tv[...] in initial years and then became dormant.

Identification of Target Groups : The progress [...] identification of the target groups was slow in most [...] the Project areas. This was attributable to lack [...] understanding of the precise scope and extent of [...] identification work. Absence of uptodate land reco[...] ambiguity in definitions of various norms, lack [...] verification, and at times, inadequate instructi[...] all contributed to improper identification. T[...] led to flow of benefits at times to wrong perso[...] Judged on the basis of size of land holding alone, nea[...] 9 per cent of the beneficiaries did not belong to [...] targetgroups.

Formulation of Programmes : Each Agency [...] expected to conduct a bench mark survey for colle[...]ing basic information regarding the prevailing soc[...] economic activities of the target population in the a[...] and the existing problems and on thas basis to evo[...] suitable programmes to tackle them. Almost nowh[...] any such study was made. The programmes w[...] formulated either by, or in consultation with, [...] technical departments of the States. Consequently, [...] schemes generally were not in consonance with [...] actual needs of the area and often lacked co-ordi[...]tion in their implementation. The approach was mos[...] physical and financial target oriented.

In all, 8.03 lakh persons had benefited from vari[...] programmes upto 1973-74 in the 34 Projects cover[...] by the Study. Of these, 72.6 per cent benefited fr[...] agricultural programmes, 13.6 per cent from min[...] irrigation schemes, 6.5 per cent from schemes relat[...]

orks programmes. from rural

Impact of Programme on Income : The impact of most all the schemes was reduced generally due to e following factors : improper selection of beneficiaries, inadequate follow up and lack of extension nfrastructural support. Programmes relating to horticulture, poultry farming and sheep rearing failed in almost all the Project areas. Table 2 shows the average ncrease in net income of beneficiaries from other important programmes.

Employment : Only 15 out of 34 Projects covered could furnish information regarding the number of agricultural labourers or marginal farmers who were provided employment on rural works programme (RWP). Hence, a complete picture regarding employment generated in all the Projects is not available. n the Projects supplying the information, a total of 8,614 agricultural labourers/marginal farmers, accounting for nearly 2 per cent of their total population, ere provided employment during the four-year period nding 1973-74. The average number of days of mployment per participant during this period was only 4 generating a wage income of approximately Rs. 126.

Data collected from sampled households show that e percentage of households participating in RWP as nearly 26 in SFDAs and 20 in MFALs. Road orks was the most important activity and accounted or 48 per cent of the households employed and 46 er cent of total mandays of employment under RWP all Projects. Soil conservation accounted for 12 per ent of household and 14 per cent of mandays.

Credit Facilities : Cooperative infrastructure has ontinued to be very weak in most of the Project areas. gencies do not seem to have made much effort in nlarging co-operative membership In nearly 48 per ent of SEDAs and 46 per cent of MFALs, none of e sampled beneficiaries had acquired membership with e assistance of Agencies. Support extended by Agencies to co-operatives for generating credit produced good sults in nly one-third of the Project areas. The overall tio of Project expenditure on such support and cooperative loans generated was nearly 1 : 14.

Co-operatives were the predominant source of credit nd accounted for 93 per cent of the loans advanced pto 1973-74. Co-operative loans increased from s. 15.07 crores in 1971-72 to Rs. 30.55 crores in 973-74. During the same period, loans from banks increased from Rs. 0.46 crore to Rs. 3.34 crores. Commercial banks played any significant role in only 9 of e Projects.

Conclusions

The schemes were well conceived but their effectiveness has been impaired due to organisational and perational deficiencies. Administrative arrangements the Project level had been weak due to delays in ppointment of staff and lack of their continuity. here has generally been no committed staff to share e responsibility of efficient execution of the schemes. hese deficiencies need to be removed.

Arrangements at the State level for ensuring supervision, co-ordination and direction also need to be rengthened. State Co-ordination and Review Committees are too large to permit frequent meetings. Their effectiveness can perhaps be improved if they function through a small Sub-Committee with adequate powers.

Programmes formulated by the Agencies have usually not been based on actual needs and conditions prevailing in the area. The efficacy of various programmes was generally taken for granted without considering the basic infrastructure support and administrative arrangements needed for them. This has led to failures of many of them. It is, therefore, necessary that the approach adopted for planning and execution of programmes is oriented towards meeting the actual needs and ensuring the results rather than securing physical and financial targets. This necessitates strict observance of guideline issued by the Department of Rural Development.

Generally only physical and financial targets are being monitored. The monitoring system needs to be oriented more towards the impact of various programmes. In this connection it may be desirable to introduce a system of concurrent evaluation. This would help in prompt removal of deficiencies noticed in the implementation of the programmes and thereby not only improve their impact but help in formulation of subsequent programmes. □

TABLE 1

Number of Projects Villages and beneficiaries covered by the Study

	SFDAs	MFALs	Total
1	2	3	4
1. Projects (No.) . .	21	13	34
2. Villages (No.) . .	172	124	296
3. Beneficiaries (No.) .	1447	1110	2557

TABLE 2

Average Increase In Net Income From Important Programmes in 1973-74

	Average net increase in income in 1973-74 over the year prior to taking up the programme (Rs.)	Increase in income as % of loan taken
1	2	3
Minor Irrigation :	1670	47.5
Dugwells	1577	48.2
Tube wells	1744	42.9
Pumpsets	855	26.5
Subsidiary occupations :		
Dairying	829	45.1
Goat Reasring	192	37.6

Annexure

Products selected for the Evaluation Study of SFDA and MFAL

State	Total No. of Projects in June 1973		No. of Projects completing two or more than two years on 30-6-73		Names of the Projects selected for the S	
	SFDA	MFAL	SFDA	MFAL	SFDA	MFAL
1	2	3	4	5	6	7
1. Andhra Pradesh .	3	2	3	2	1. Nalgonda	1. Viesakhapatnam
2. Assam . . .	2	2	2	2	2. Goalpara	2. Kamrup
3. Bihar . . .	3	2	3	2	3. Purnea	3. Shahabad
4. Gujarat . . .	3	2	3	2	4. Surat	4. Bulsar
5. Haryana . .	2	2	2	2	5. Gurgaon	5. Bhiwani
6. Himachal Pradesh .	1	1	1	1	6. Sirpur	6. ..
7. Jammu & Kashmir .	2	2	2	2	7. Anantnag	..
8. Karnataka . .	3	2	3	2	8. Mysore	8. Tumkur
9. Kerala . . .	2	2	2	..	9. Quilon	..
					10. Cannanore	..
10. Madhya Pradesh .	3	2	3	2	11. Chhhindwara	7. Raisen-Sehore
					12. Bilaspur	..
11. Maharashtra . .	3	2	3	2	13. Bhandara	8. Ratnagiri
					14. Thana-Nasik	Satara
12. Manipur . .	..	1	..	..	..	..
13. Meghalaya . .	..	2	..	..	..	..
14. Nagaland. . .	1	1	..	..	..	..
15. Orissa . . .	3	2	3	2	15. Ganjam	9. Cattack
16. Punjab . . .	2	2	2	..	16. Sangrur	..
					Patiala	
17. Rajasthan . . .	3	2	3	2	17. Alwar	10. Bhilwara
18. Tamil Nadu . .	3	2	3	2	18. Madurai	11. Salem
19. Tripura . . .	..	1	..	..	..	..
20. Uttar Pradesh . .	4	2	4	2	19. Rae Bareli	12. Ballia
					20. Badaun	..
21. West Bengal .	3	2	3	2	21. West Dinajpur	13. Bankura
22. Delhi . . .	..	1	..	1	..	..
23. Goa . . .	..	1	..	1	..	..
24. Pondicherry . .	..	1	..	1	..	..
Total . . .	46	41	45	32	21	13

Social Service to be effective has to be rendered without noise. It is best performed when the left hand knoweth not what the right is doing.
—Gandhiji

Holding the Price Line

—K. Prasad
Research Officer, Planning Commission

IN the last less than four post budget months there has been a rather sharp increase in prices. The whole price index for all commodities (base 1970-71) which stood at 183.6 for the week ending 24th February, 1979, has jumped to 202.2 by 23 June, 1979, recording an increase of 7.9 per cent. The price index on 23 June was higher by 8 per cent, compared to the corresponding period of the last year. In the immediate aftermath of the budget the most pronounced increase in prices occurred in fuels, tobacco and one or two industrial products. Since then the price rise has spread to other manufactured and semi-manufactured products, and more recently has begun to ffect primary products also. The current rise in rices has caused widespread concern. The post udget upsurge in prices, after the relative price ability that was maintained during 1977-78, and ı the first eleven months of 1979-80 has been on ccount of budgetary and non-budgetary factors.

A controversy has been raised as to the extent of rice increase that was due to the budgetary factors nd the increase on account of other factors. It has een estimated that out of the total increase in wholeale price index during March 1979, about 1.5 per ent could be attributed to budgetary factors, but it ; also true that in the wake or fresh levies in the budet, traders, industrialists and retailers found it n easy excuse to hike up prices to swell their profits. t might, however, be stated that to get involved in ıch controversies is not only futile but it might divert ıe attention from the real issues. First of all to nderstand the phenomenon of current uptrend in rices, let us analyse the reasons for the inflationary ressure that has been built up in the economy during ıe last three years, and the countervailing forces ıat enabled the Government to maintain price tability inspite of would-wide inflation.

uilding up of Inflationary Pressure

Actually, to a large extent, the current upsurge in rices has resulted from the inflationary pressure geneated in the economy due to expansionary monetary nd fiscal policy pursued during 1977-78 and 1978-79. he fiso-monetary policy adopted during 1977—79 as resulted in a sharp increase in money supply during ıe last three years and it has gone up by 62 per cent ıe increase during 1976-77, 1977-78 and 1978-79 being 20.03 per cent, 14.4 per cent and 18.1 per cent respectively whereas national income has risen only by 13 per cent. In the same period, bank credit to the industrial sector expanded by over 50 per cent whereas increase in the industrial output has been only 22 per cent. The increase in money supply has been due to a number of factors in which deficit financing by the Centre has played a major role. The order of deficit financing has been Rs. 834 crore in 1977-78 and Rs. 1590 crore in 1978-79.

The later figure does not include an amount of Rs. 555 crore deficit as a result of clearance of States' overdraft as on 31st March, 1978. In the current year, there is no indication of the reversal of the earlier trend as the proposed figure is around Rs. 1400 crore. The deficit of this order in 1979-80, on a rough estimate, is likely to increase money supply by about 20 per cent. Another major factor responsible for the sharp increase in money supply has been the large inflow of foreign exchange which is continuing to grow at the rate of Rs. 1000 crore per annum, despite a Rs. 1100 crore trade deficit. Thus, while the primary cause of this rapid increase in supply of money has been no doubt the sharp rise in foreign exchange remittances to India and the bumper harvests of the last three years, which compelled the government to buy up as much as 20 million tonnes of foodgrains for its buffer stock, the situation has not been helped by the rapid increasee in non-developmental and non-loan spending by the State Government and to a lesser extent, by the Centre. Indeed, next only to the rise in foreign exchange assets, until March 1978, is the most rapid growth in bank advances to the government sector. The fact that this money has not been channelled into productive investment has only heightened its inflationary potential.

Reasons for Price Stability during 1977-78

Inspite of the bullish pressure generated in the economy, there were certain countervailing forces, which kept the demand pull on prices under check. The reason for this stability has been due to the fact that the rise in the prices of manufactured products, particularly, of basic and capital goods was offset by a sharp decline in the prices of primary agricultural products, caused by a succession of bumper harvests.

Moreover, macro-economic factors have also played an important part in keeping prices stable. Firstly, the full impact of the foreign exchange remittances could not be felt on money supply as upto 50 per cent of these remittances in the last three [illegible] went into time deposit with the banking system. [illegible] is the main reasons why the country [illegible]

The views expressed are strictly of the author and not necessarily of the Plannihg Commission.

8 DPD/79—2

such unprecedented price stability. Secondly, since the beginning of 1978, the country has once again been incurring an import surpluses of over Rs. 100 crore a month. Given that the domestic multiplier is just under four, the expenditure on the import surplus has withdrawn asmuch as Rs. 400 crore of purchasing power from the economy every month. This has almost wholly offset the inflationary affect of the sharp rise in industrial activities which began in April last year, but, in January this year, exports have again exceeded imports. It is possible, therefore, that the rise in prices in March 1979 reflects the weakening of the deflationary affect of a large import surplus. It is worth mentioning in this context that after two years of heavy trade deficits in 1974 and 1975 the country began once again to record a small trade surplus from January 1976. Prices once again began to rise after a time lag of two months.

The other factors responsible for price stability were efficient supply management. The import liberalisation of the past two years, helped the government to make available edible oil at reasonable prices. Similarly, ample supply of sugar also kept its price at a reasonable level. Above all, the comfortable food position and adequate buffer stocks enabled the government to remove all restrictions on food movement and depress the prices, whereveer they tended to harden.

Bright Features of the Economy

In the light of the analysis presented above, the current rise in prices should not be regarded as a seasonal phenomenon and to think that the situation will improve after monsoon. It will also be a mistake to regard it entirely as an imported phenomen and to think that after four years of relative price stability in India and rampart inflation abroad, Indian prices have become totally out of alignment with the world prices, and the present rise in prices, mainly of manufactures, is a corrective process that is taking place in a rise of domestic prices towards those reigning in the world market. This is not the whole truth. With limited share of imports in the overall domestic supplies the impact of outside inflation can be contained by efficient supply, management and fisco-monetary discipline.

After all, it is not a small achievement that during the last two years, when the inflation was raging in the industrially developed countries, Indian economy displayed remarkable price stability. Moreover, even now, there are certain bright features of the economy that can help the government in controlling inflation. These include (a) the country has become a net exporter of foodgrains, and after meeting the outstanding sale abroad, contracts of no less than 2.1 million tonnes of wheat and rice, the food buffer stock is likely to exceed 20 million tonnes this summer (b) the foreign exchange reserves are continuing to grow at the rate of about Rs. 1000 crore a year despite a Rs. 1100 crore trading deficit during 1978-79 (c) exports are once again picking up after November 1978 and as a result the overall exports have recorded a growth of 3.5 per cent, against the minus growth rate anticipated earlier (d) the industrial production has picked up and it has recorded an increases of about 8 per cent in 1978-79 against 3.9 per cent in 1977-78 (e) the present price in largely confined to industrial products, on the co trary the price of agricultural products have remain stable (with foodgrain prices registering a margin decline), (f) the rural re-orientation of the budg and the like development startegy envisaged in th plan will widen the production base of the econom Similarly in the field of industrial production, th emphasis on small and village sector will improve th supply of mass consumption goods to the people Of course, the inflationary pressure already built u in the economy needs to be eased out by adopting sui table policy measures for curbing the overall pressur of demand and removing the psychology of scarcity by increasing supply of essential consumer goods by raising production, speedy transportation, and efficient distribution.

Post Budget rise in Prices

The current uptrend in prices followed immediately after the presentation of the budget. As a matter of fact, the price index was showing a declining trend during the preceding months of November 1978 to February 1979. The 1979-80 budget, which contained additional indirect tax proposals amounting to Rs. 606 crore lead to immediate reversal of the earlier trend. It is, however, difficult to precisely estimate the direct impact of tax proposals on prices, but it is certainly more than 1 per cent, claimed by the Finance Ministry. Moreover, the additional burden amounting to Rs. 606 crore in the form of custom and excise duty has mainly affected the urban middle class, since the duties have been levied on petroleum products and on final products. As such, these have been passed on to consumers. Further, the imposition of indirect taxes of this order has provided the shelter to manufacturers, traders and retailers to push up prices. The anxiety caused by the initial price rise is now tending to fuel a speculative rise in prices.

The current rise in prices can be tracted back to the expansionary monetary policy followed during the the last three years, which has landed us in a situation of excess liquidity in the economy. For example, during the current busy season—from October 17, 1978 to April 20, 1979—the expansion in money supply at Rs. 2518 crore (12.9 per cent) was much higher in absolute terms, compared to that of Rs. 2125 crore (12.8 per cent) during the same period of the last busy season. Net bank credit to government during the same period was Rs. 2,122 crore, as against Rs. 2019 crore during the last busy season. Bank credit to the commercial sector has, however, gone up steeply by Rs. 1766 crore (11.1 p.c.) in the 1978-79 busy season against by Rs. 940 crore (6.8 per cent) during the 1977-78 busy season. There is no doubt that a substantial part of the bank credit has gone in for inventory building and speculative purposes.

The above statement is borne out by the fact that there has been cousiderable increase in the prices of certain items of consumption which is not warranted by the supply constraints. For example, in the case of sugar, gur and khandsari there has been about 25 per cent price increase during the first quarter of 1978, while the supply remains comfortable. This increase has been due to the manipulation of releases by the mills, after complete decontrol of sugar in August

1978. Similarly, in the case of cotton textiles, while the price of raw cotton declined during September 1978 to March 1979, on the contrary the mills and traders have increased the prices. This shows that neither the supply position nor the cost of production were the sole determinant of prices.

In addition to demand pull on prices, there are a number of other contributory factors for the recent spurt in prices. The global increase in prices during the last six months in the overseas market has resulted in cost escalation of some of the manufactures. The 25 per cent increase in oil prices by the OPEC countries has forced the government to hike up excise duty on petroleum products such as petrol, LPG, kerosene, etc. It has been estimated that this group alone has been responsible for 15.9 per cen increase in whole sale price index. Further increase in crude price during April 1979, will put an additional burden of about Rs 900 crore on oil bill. In addition to oil, the copper prices have increased by 40 per cent since the beginning of 1979, and other materials like steel, zinc, and aluminium prices have risen in sympathy International chemical producers have jacked up their prices by 30 to 40 per cent and synthetic fibres have gone up by 15 per cent and edible oil prices have risen by 100 dollars per tonne, fertilizers are 25 per cent costlier and the capital goods are joining the price boom. Till now liberal imports have helped the Government to check inflation, but now the conditions are changed and imports have become a source of inflation.

In supply management in addition to higher cost of imports, a severe blow has been rendered by the steady deterioration of transport system, railway wagons are in short supply, the ports are congested and despite 938 per cent increase in truck production commercial vehicles are not available. The transport bottlenecks has affected the supply of coal to power houses and industries both large and small affecting industrial production, and reduced supply of goods like paper, cement, etc.

In addition to the rise in the price of edible oils, cotton textiles, sugar and gur, the Government has announced increase in the prices of certain oher commodities. While the price of steel and cement has already been raised, the upward revision of coal price due to cost escalation and upward revision in wages is on the cards. Similarly, the question of further increase in the price of petroleum products cannot be postponed for long.

Thus presently, in respect of certain key commodities, in the face of resurgence of demand, there is shortage of capacity in several sectors. The country has gone from glut to scarcity in the case of cement, steel, coal and several other items.

Anti-Inflationary Measures

(i) In the field of fiscal policy, the primary task is to reduce the level of deficit financing. It might be noted here that the order of deficit financing during the first two years has already exceeded Rs. 2226 crore target set for the Sixth Five Year Plan (1978-83). In reducing the level of deficit financing, the primary task will be to prune non-developmental expenditure, and increase the size of plan outlay both for the centre and States. In this direction it is hoped that the Commission on public expenditure will do its job thoroughly and come out with realistic suggestions. In addition, there is need to take all measures to improve tax and non tax revenue of the Centre and States. In this regard the valuable suggestions recently made by the Finance Minister to (i) exploring the possibility of levying expenditure tax, (ii) improving the income tax administration which according to him can raise income tax collection by about 31 per cent needs careful consideration. In the immediate future though deficit budgeting may not be possible to avoid, but the fiscal reforms that the Finance Minister has in mind need to be implemented. Finally, the public sector undertakings should be made more efficient so that the budgetary support to meet their losses or expansion of capacity is reduced to minimum.

(ii) With a view to effect economy in public expenditure and to reduce non-plan expenditure, the Government should try and prune its wage bill by strict control on recruitment but immediately it cannot easily deny its employees the wage hikes to which they are entitled under the existing accords. It will also be difficult for the government to resist the increasing pressure for granting bonus to the railway employees, which is likely to further add to the overall pressure of demand.

(iii) According to the Dagli Committee report on Controls and Subsidies, the amount of government subsidy has grown in geometrical progressions from Rs 96 crore in 1970-71 to about Rs. 1600 crore to date. In view of the Committee's finding that the major beneficiaries of the controls and subsidies were 10 per cent of the upper strata of society, the continuance of these subsidies were inconsistent with the Government's policy of helping the weaker sections of the society There was an urgent need to review these subsidies and put a check on drain of budgetary resources in the form of subsidies.

(iv) There has been a substantial increase in credit expansions by the banking system particularly to the trade sector. It has also been found that the commercial banks have flouted the Reserve Bank's directive with regard to credit control. Part of the credit advanced to the trade and industry has been used for inventory accumulation and also speculative purposes, which has pushed up the prices of manufactures. This trend needs to be reversed by effective credit control. The expansion of credit in recent months has been out of proportions to increase in production. But the enforcing of further discipline on banks, which are known to be violating even the existing credit norms is not going to be an easy task as these measures would impinge on their profitability. However, in view of the overriding need to counter inflationary pressure, a stricter credit and monetary discipline can perhaps be scarcely avoided. In a meeting held on 25th May this year the Reserve Bank Governor has told the bankers that the credit expansion in the current finacial year should if anything be significantly less than in the last year in both relative and absolute terms'. The Commercial Banks have been asked to evolve a set of internal guidelines, to achieve this objective of credit policy. In addition, they have been told that (i) the credit limits should not be adjusted upwards to any extent without the full scrutiny and in this scrutiny expectations of further increase in prices should be discouraged.

(ii) While fixing new limits or increasing existing areas banks should increase great discretion, particularly, in regard to the large accounts—i.e. above Rs. 50 lakhs. (iii) Banks should carefully monitor and restrict the credits against sensitive commodities particularly in respect of traders. (iv) the discipline should be enforced from now on in the slack season, since in the next month or so larger credit would be required for financing food procurement operations. (v) The Banks have been asked to ensure better return of funds from such seasonal industries as sugar and textiles, which had borrowed heavily. (vi) The banks should in current fiscal year also abide by the requirement of restricting credit to their own resources.

The RBI has, however, not implemented two major suggestion made recently. The banks have been only told that the statutory liquidity Ratio (SLR) would be raised from the present 34 per cent to 40 per cent, if banks failed to rein in commercial credit expansion in the coming months. The suggestion to raise the SLR to 40 per cent and to extent it to entire demand and time liabilities as against on the incremental as at present, needs serious consideration, to mop up excess liquidity during the slack season. The banks can be compensated for the resulting loss by some increase in interest on this as well as on the impounded deposits. Another proposal reported to have been made by the Planning Commission that the bank rate should be increased from 9 per cent to 10 per cent and that entire interest structure should be realigned on that basis. It is also necessary to moderate the claims of various public sector agencies on bank credit as part of their price support.

(vi) Recently introduced non-inflationary scheme of food for work needs to be intensified. The scheme has certain definite advantages in the context of inflationary pressure in the economy as (i) it reduces the government's cost of maintaining food stocks, (ii) it is a non-inflationary source of executing development programmes and (iii) it provides food to the unemployed labour force, who have no purchasing power.

Supply Management

(i) In recent months there has been substantial increase in the price of imported oil due to price hike by the OPEC countries. It has been roughly estimated that a hike in oil price is likely to increse the oil bill by as much as Rs. 700 —900 in the current year. Moreover, there is also difficulty in obtainig oil on regular supply basis with the result it has been reported that part of the oil has been purchased in spot market where the prices are much higher. In this light there is urgent need to reduce consumption since the country will have to depend on imported oil. In the past few months some steps have been taken to reduce consumption of petrol, diesel and kerosene but these are half hearted measures and are not likely to produce the desired result. Therefore to conserve oil and save the economy from imported inflation the government should come out soon with an integrated energy policy. Any delay in its formulation or implementation will have far-reaching cor quences on production costs and on balance of tra which has recorded a massive deficit of Rs. 1(crore in 1978-79, compared to Rs. 621 crore 1977-78.

(ii) The productivity needs to be improved pai cularly in public undertakings to alleviate the scarc of coal, steel, power and other industrial inputs. T existing transport bottlenecks should be removed that the movement of coal is stepped up to increa power generation. The adequate supply of coal industry will increase industrial production.

(iii) It is a welcome feature of the import polic announced recently that it continues the liberal impo policy of the last two years, while rationalising it i the light of past experience. But it must be realise that better management of demand through increase import should help only upto a point. Since th prices of most goods in short supply are higher over seas than at home, the danger of afflicting the econom with imported inflation cannot be minimised.

"The economy is delicately balanced and in the absence of strict economic discipline and skilful and efficient management of demand and supply the country would be faced with very severe inflationary pressure."

(iv) In this context it is necessary that the Government comes out with an integrated wage policy reducing the horizontal disparity in salary structures and wage rates between the public and private sectors and vertical disparity within the two sectors. This will further improve the labour management relations, which has shown considerable improvement during 1978, when the number of mandays lost in industrial disputes was 21.5 million, as compared to 25.3 million in 1977.

(v) A comprehensive public distribution system has been launched throughout the country from 1st July this year. The production-cum-distribution scheme is intended to cover the entire population through a network of 3.5 lakh fair price shops. A decision has been already taken to sell wheat rice, and coarse grain, edible oils, common clothing, kerosene and soft coke through such shops. Under the scheme the Centre would take-over the responsibility of measures needed to ensure price stability, procuring and building

ffer stocks of the listed commodities, where neces-y and importing any of these items that may be short supply. The States will look after their tribution through approved retail outlets. The ivernment proposes to set up at least one fair price op for every village with a population of 2000 or ore the network will cover the entire rural areas is scheme, if implemented efficiently, will check the eculative rise in price, and hoarding and black-rketing, as we have recently witnessed in the case cloth, sugar and other commodities, in which re has been no supply bottleneck and it was only culative increase in prices. Besides, the public tribution system covering the essential items of nsumption will enable the Government to hold the ce-line.

(vi) Finally, in recent years, the phenomenon has ierged under which investment is lagging behind current rate of saving. In case the supply manage-nt is to be made efficient the level of investment s to be pushed up. The solution to the red problem inflation lies to a great extent in widening the oduction base of the economy by increasing plan and non-plan investment. This can only be achieved by creating a favourable climate by improving the overall economic outlook.

According to the economic analysis presented above the economy is delicately balanced and in the absence of strict economic discipline and skilful and efficient management of demand and supply the coun-try would face very servere inflationary pressure. It is, however, worth remembering that despite comfortable food and foreign exchange posi-tion, country cannot avoid taking certain hard political decisions particularly with regard to fisco-monetary discipline. Moreover, there are certain other major areas of policy formulation where gaps exists these include energy policy, expenditure policy, wage income policy, etc. It is hoped that these gaps will be speedily filled up without further delay. Any mistake to regard the current up trend in prices as 'seasonal' or 'mainly imported' may expose the economy to severe inflationary pressure causing serious set back to the government's new economic goal of ameliorating the living conditions of the vast majority of population living below the poverty line. □

A Little Economics And A Lot More Reflections

John Kurian
Joint Director
Agricultural Prices Commission

THE following are some important basic statistics relating to ten of the most developed countries and India, as published in World Bank Atlas for 1978.

In terms of per capita income India's case is frighten-ingly hopeless Also, in terms of real growth per capita during recent years our case is equally dis-appointing Our growth of population is still far ahead of that of any of the developed countries If the recent trends have to continue, our future appears to be bleak.

Do we have to be really desperate as a nation? Apart from the spiritual sphere where we consistently maintain a balance of payment surplus, let us look at the plane of simple ordinary physical life. Most of these developed countries are worried about their aging populations and sagging muscles. Some of them may be even hounded by the fear of being got extinct one day. Compare our case, a young nation kicking with vigour, though a little bit of muscle development is needed. There is no fear of getting extinct in any foreseeable future. No economist has yet started talking about equalising the marginal cost (or marginal utility?) of production of an additional child in an Indian village and a North American city. The location of birth continues to be a matter of demographic luck of the child.

What is the ultimate in modern life? Is it the maximisation of income or welfare? A little reflec-tion may be in order. Do the distributions of income and welfare overlap? A categorical answer may be difficult and may require a lot more research for which tools have yet to be developed. However, casual observations in ordinary life may very well give a clue. Anybody with experience of life in affluent societies can recollect the pain of alienation around. Alienation from nature, alienation from one's imme-diate surroundings, alienation from one's own family and associates and alienation from one's own self. All these are indications that the shadow price of welfare is much higher than that of the usual exchange rates quoted at the counters of daily life. Unfortunately, one can observe a lot of misallocation of time energy and other resources in our own cities due to the wrong priorities dictated by such distorted exchange rates. And it appears that the era of alienation has already set in.

Nowadays, no economist or for that matter no sensible person is talking about catching up with the affluent societies in the rat race for per capita income or GNP. Considering the natural resource con-straint and our demographic realities the rat race is neither possible nor desirable. Our comparative ad-vantage lies elsewhere. As a start we should stop

8 DPD/79—3

looking at the per capita income figures of affluent countries even after they deflated by international comparison of prices. How about maximising the welfare of the nation? How about maximising per capita welfare? Is there a costly trade-off between equity and growth of welfare? If so, is it as costly as the so-called trade off between equity and growth of GNP? A little digression is needed.

Conceeding to the fact of the impossibility theorems about the existence of social welfare functions, one can still look for the possibilities of relating the individual welfare and the national welfare. A rich business house may be able to generate income worth millions of rupees which may be a hundred thousand multiple of that generated by a poor rural landless labour family. But, can there be such astronomical difference between the welfare generated/consumed by such families. Obviously, the trade-off between equity and growth appears to be much less painful in the case of welfare compared to income. It may be worthwhile to pursue the path opened up by Rawls. (Reference is made to the now classical work of John Rawls : "A Theory of Justice", Harward University Press. 1971)

It may not be too much out of line with reality if one assumes that National Welfare is the sum total of individual welfare. With this criterion, let us see where we stand. With the second largest population in the world, our potential National Welfare is far ahead of that of the developed countries including U.S.A. By inputing proper values to individual freedoms in the National Welfare function, we can beat even China, the country with the largest population.

Now, the pertinent question is how to develop such Individual and National Welfare Functions? What are the variables to be included in such functions? How to train the national income—accounting statisticians to measure such welfare? Leaving these questions to be answered by the best brains of the country, both inside and outside, we shall make a few mundane observations from simple ordinary life.

Whatever way one measures welfare, it has to have an important component related to individual well-being or simply happiness. Also it is abvious that such well-being does not depend only on the physical goods or services purchased or obtained and consumed. The manner and atmosphere in which such goods or services are offered and consumed do affect the quantum of well-being achieved. Also there may be innumberable instances, where an individual's welfare can be enhanced without decreasing that of anybody else or without any resource cost. For instance, simply being nice to a person may add to that person's welfare without reducing the welfare of the nice person. Indeed, to have a lot of happv people around is an experience which itself may enhance a person's welfare.

Country	GNP per capita		Population	
	Amount for 1976 in US$	Real Growth rate in for 1970-76	Number for mid 1976 in 1000s.	Grow rate ir % foi 1970-76
1	2	3	4	5
Switzerland .	9160	0 5	6350	—0 2
Sweden . .	9030	2.1	8219	0 3
Canada . .	7950	3 5	23025	1 3
United States .	7880	1.7	215142	0 8
Norway . .	7800	4.5	4027	0 6
Denmark . .	7690	1.5	5073	0 5
West Germany .	7510	2.0	61513	0 2
Belgium . .	7020	3.2	9815	0 3
Australia . .	6990	1.9	13916	1 6
France .	6730	3 3	52920	0 7
India . .	140	0 5	620440	2 1

Unfortunately, at times, one gets the feeling that we are turning into a nation of angry people. We are buildig up a lot of steam, the letting out of which generates a huge amount of National illfare (negative of welfare). One may even wounder whether we as a nation is forgetting the art of smiling. The boss is

"To have a lot of happy people around is an experience which itself may enhance a person's welfare "

humourless with the subordinates, the public functionaries are angry with the general public and the private functionaries are indifferent towards their customers. These have their chain reactions throughout the society. One may wonder, how much we are loosing in this process in terms of national welfare.

Another problem is that unwittingly we create situations of immaginary trade-off between individual well-beings, where no such conflicting interests exist This is true from ordinary queue breakings to behaviour at the highest echelons of public life. The result is creation of a lot of ill-being even for the aggressive party and hence reduction in overall welfare. Perhaps, the most difficult situation is one where a person's welfare is enhanced by another person's ill-fare. (Economists characterise such situations in terms of interdependent utility functions where one individual's cosumption enters another individuals' utility function as a negative argument). May be this is beyond the realm of economics. And the ground should be familiar to psychologists.☐

Problems of Bonded Labour

A STUDY

R.N. Chandolia
Senior Research Officer,
Planning Commission

EFFORTS to combat the system of forced labour were for the first time made in early thirties In onsonance with the provision of the I.L.O Convention prohibiting the forced or compulsory labour, ccepted by the Government of India, the State Govnments were requested to take stern steps in this irection. However, it was only after the attainment of idependence that a serious view of this practice was ıken by the Government A special provision in ırticle 23 of the Constitution to prohibit traffic in uman beings and 'begar' and other similar forms of orced labour was made. However, the practice of onded labour still continues in several areas in one orm or the other. The Commissioner for Scheduled astes and Scheduled Tribes in his Annual Report for ie year 1956-57, quoted Orissa, Madhya Pradesh and Maharashtra where this practice was prevalent

As the years passed, the existence of this practice as revealed in more and more States. While most the State Governments were reluctant to accept e prevalence of such a practice, the stdies conduced by the office of the Commissioner for Scheduled astes and Scheduled Tribes, Tribal Research Institutes, id other oragnisations revealed its existence in a imber of states. In 1956-57, while the number of ates/Union territories where existence of this practice as reported was only three, it rose to five in 1960-61 id eight in 1965-66 and then, further to twelve in 970-71. However, out of these 12 States/UTs the ate Governments of Andhra Pradesh, Kerala, Madhya adesh, Maharashtra, Karnataka (then Mysore State) d UT Administration of Dadra and Nagar Haveli clined to accept its existence. The other States iere the practice was reported by the Commissioner re Gujarat, Jammu & Kashmir, Orissa, Rajasthan, tar Pradesh and the UT of Laccadives. A year er the existence of such a practice was also reported om certain areas of the States of Bihar, and Tamil idu.

While a number of State Governments contradicted the existence of the bonded labourers in their tes, some of the State Governments like Rajasthan 'n enacted legislations for abolition of this system. owever, in 1975 when the Government of India issued Bonded Labour (Abolition) Ordinance and included rehabilitation of bonded labourers as the Government's special programme, most of the State Governments came forward to accept the existence of this system in their respective States. The ordinance was later on given the shape of an Act. This enactment not only defined the practice of bonded labour but also provided for extinguishment of liability to repay bonded debt, formation of vigilance committees and punishment for practising this system.

Planning for the Rehabilitation

The most important fact of planning for the rehabilitation of bonded labourers is to know their state wise and perhaps also their district/blocks level distribution in the country. But unfortunately there are no definite estimates of the number of bonded labourers in the country. The most important regular sources of information on this are the Reports of Commissioner of Scheduled Castes and Scheduled Tribes. According to the official estimates as contained in the latest Report of the Commissioner for the year 1975-76 and 1976-77 their number in the country is 98051 and the number of bonded labourers in various States varies from a mere 3 in the State of Mizoram to 64040 in Karnataka. Of them 97,114 are reported to have been freed and out of whom 23,720 are reported to have been rehabilitated. There is, however, a wide variation between this number and the number as estimated by a recent survey jointly conducted by the Gandhi Peace Foundation and National Labour Institute in the core States where this practice is reported to be largely practiced. The estimated number of bounded labourers in eight of these surveyed states alone counts to 21.7 lakh. If we derive estimated number of bonded labourers in the remaining two States of Orissa and Maharashtra on the basis of the same percentage of bonded labourers as in the other states to total agricultural labourers i.e. 6.1 per cent it comes to over 26 lakh. According to the report the estimates of bonded labourers at national level may reach upto 27 lakh. As against this, the State-wise number of bonded labourers as contained in the 1975-76 and 1976-77 Report of the Commissioner for Scheduled Castes and Scheduled Tribes is very much less. Table 1 on next page shows the estimates arrived at by the above noted joint study and also the number given by the commissioner's report;

Table 1

Sl. No.	Name of the State/UT	No. of bonded labourers: As contained in Commissioner's Report	As estimated by the Survey	Percentage of Col. 4 to total agricultu labourers in the States
1.	Andhra Pradesh	826	3,25,000	4 96
2.	Bihar	2,562	1,11,000	1 7
3.	Gujarat	37	1,71,000	9 5
4.	Karnataka	64,040	1,93,000	7 6
5.	Kerala	702	..	.
6.	Madhya Pradesh	1,612	5,00,000	11 8
7.	Maharashtra	.	3,29,000	6 1
8.	Orissa	612	1,18,000	6.1
9.	Rajasthan	5,533	67,000	9.4
10.	Tamil Nadu	2,882	2,50,000	6.0
11.	Uttar Pradesh	19,242	5,50,000	10 53
12.	Mizoram	3	..	..
	Total	98,051	26,14,000	6 1

The number of bonded labourers in the State/UT of Jammu and Kashmir, Himachal Pradesh, Dadra and Nagar Haveli where the existence of practice was also reported by the Commissioner for Scheduled Castes and Scheduled Tribes in his earlier Reports is not available.

According to the information contained in aforesaid survey report, the 28th round of the National Sample Survey has also estimated that 4.2 per cent of the total number of agricultural labourers in the country i.e. about 20 lakhs are bonded. However, this position does not appear to be correct as no information as such on bonded labourers was collected during the 28th round of NSS. In the 32nd round (July 1977 to June 1978) of the NSS an effort was reportedly made to collect this information but the results of this have not yet been made public.

In the Joint Survey Report the number of bonded labourers in each district has been estimated in four ways: (1) the proportion of bonded labourers t the population surveyed, (2) the proportion of the bonded labourers in the population of agricultural labour, (3) the proportion of bonded labourers in the Scheduled Caste and Scheduled Tribe Population and (4) the average number of bonded labourers in the surveyed villages was worked out and it was assumed that all villages in the district show the same average number of the bonded labourers. These calculations were also based on the assumption that the villages selected for survey represented the whole district including the Scheduled Castes/Tribes population. The number arrived at through all the four methods are reported to have been quite close to each other Though the exact percentage of Scheduled Castes and Scheduled Tribes in the villages surveyed has not been given in the report, it is doubtful that the Scheduled Castes and Scheduled Tribe population of the surveyed villages could represent the whole district. The percentage of population of scheduled castes varies from one village to another to a great extent and in case of Scheduled Tribes the variation from one village to another is high because the Scheduled Tribes in some villages may form over 80 per cent of the village population while in other, their percentage may be negligible Hence the estimates arrived at by National Survey can not be taken a absolutely dependable. The method adopted for identifying the bonded labourers through group discussions is also likely to give biased results as sometimes even those who are not actually bonded labourers, may report themselves as bonded labourers in the hope of getting Government benefits.

It is well known and amply clear that the State Governments/UT Administrations are not exactly very keen to accept the wide prevalence of this system in their respective states. It is because the existence of this system not only brings bad name to the concerned States or UTs but also puts the responsibility to get them released and rehabilitated. Thus the number identified by the State Government/UT Administration cannot be taken as the reliable number of the bonded labourers and are definitely much lower than the actual number. As already pointed out the methodology adopted for estimating the number of bonded labourers in the National Survey also cannot be taken as absolutely reliable. However though these estimates may show some inflated number of bonded labourers they may not be very far from the actual number, which may be around 20 lakh in the country. The State Governments should, with the help of their Tribal Research Institutes, immediately undertake special studies to identify the bonded labourers.

The National Sample Survey Organisation which had also attempted to collect information on the bonded labourers in their 32nd round but has not so far prepared final estimates should publish the results quickly and make another attempt to find out the

Table 2

Sl. No.	Name of the State	Released	Rehabilitated	Percentage of Rehabilitated
1.	Andhra Pradesh	826	698	84.50
2.	Bihar	2,038	613	30.08
3.	Gujarat	37	36	97.30
4.	Karnataka	64,040	4,668	7.29
5.	Kerala	702	186	26.49
6.	Madhya Pradesh	1,500	33	2.20
7.	Orissa	311	302	97.11
8.	Rajasthan	5,533	2,381	43.03
9.	Tamil Nadu	2,882	1,998	69.32
10.	Uttar Pradesh	19,242	12,805	66.35
11.	Mizoram	3	..	Nil
	Total	97,114	23,720	24.42

number of bonded labourers in the country as soon as possible, if necessary giving special training to the field staff for collecting this information.

Rehabilitation

The more important problem is, however, the rehabilitation of the bonded labourers released from debt bondage. But unfortunately the process of rehabilitation of the bonded labourers released from debt bondage is moving at a snail's pace inspite of the special instructions issued by the Central Government to the State Government/UT to formulate necessary schemes and utilise the ongoing plan schemes for their rehabilitation. According to the latest available information only 24.42 per cent i.e. 23,720 out of 97,114 emancipated bonded labourers have been rehabilitated so far. Table 2 gives details of the state-wise position of released and rehabilitated bonded labourers in respect of 11 states/UTs.

It is apparent from the above Table that the progress of the rehabilitation programmes is rather feeble in such States as Karnataka and Madhya Pradesh where even ten percent of the emancipated bonded labourers have not been rehabilitated. If we take into consideration the unofficial figures of bonded labourers estimated by the National Survey which puts the number of bonded labourers to about 27 lakh, the percentage of bonded labourers freed and rehabilitated in the country comes to only 3.60 and 0.88 respectively. One may, therefore, argue that it might take decades for the emancipation and rehabilitation of all the bonded labourers. The Commissioner for S.C. & S.T. in his latest Report for 1975-76 and 1976-77 has quoted instances where the emancipated bonded labourers were allotted land which could never be used for cultivation and all these persons were taken as rehabilitated in records but in reality they did not get any meaningful resources base for subsistence. Some of the State Governments have however, taken more appropriate steps. For example in Rajasthan the emancipated bonded labourers have been secured minimum wages to which the free labourers were entitled. In Orissa the Government is paying Rs. 50/- per month to such persons for the first six months. But these steps cannot ensure them a regular sources of income. Any steps to emancipate bonded labourers without ensuring a permanent means of livelihood is not going to do any good to these persons. They will again come under the clutches of the former money lenders, landowners and in rather worse form. During a study on system known as Sagari system in Rajasthan the bonded labourers were reluctant even to reveal that they were bonded. It was only after great pursuation that they did reveal their true status. It was because by remaining Sagaris they were at least ensured a regular meal which was otherwise not available. Due to the lack of cultivable land, it might perhaps not be possible to allot land to all the freed bonded labourers. Alternative methods of rehabilitation will have to be thought about and plan for rehabilitation drawn up carefully to suit local conditions. Immediately after emancipation they have to be provided with monthly subsistence allowance on the pattern of the Government of Orissa. Simultaneously steps will have to be initiated to provide a regular source of livelihood. In areas where cultivable waste land is available that should be allotted to them along with all the agricultural inputs required for cultivation. The Government should necessarily bear the cost of making the waste land cultivable. In areas where sufficient land is not available, these persons should be settled in animal husbandry, bee-keeping and other small and cottage industries, of course, keeping in view the local conditions and after giving them appropriate training. In cases of rehabilitation of these persons in animal husbandry a small plot of land for keeping the cattle to each household and some common land for growing fodder will have to be provided to meet the needs of fodder for all such persons in the village, as they will not be allowed to graze their cattle on others' land Needless to say that the most important step in this regard would be to ensure minimum wages to all landless agricultural labourers including these people. It may also not be forgotten that released bonded labourers are a useful stock of national human resources who can be organised in the form of reserve army of labour', in Marxian terms, who may move within a district for social over head construction. □

Study of Crash Scheme For Rural Employment

Programme Evaluation Organisation: Planning Commission

THE CRASH Scheme for Rural Employment (CSRE) was initiated in the year 1971-72 by the Government of India and remained in operation till the year 1973-74 with the following objectives :

(i) the direct generation of employment in all the districts of the country through the execution of projects which are essentially labour-intensive ; and

(ii) the production of assets of a durable nature in consonance with local development plans so that the all round development of the districts is assisted

The scheme was designed to generate, on an average 2.5 lakh man days of employment in every district. According to the guidelines, the projects were to be labour-intensive and to promote the development of districts. The cost of material, equipment etc. was not to exceed 25 per cent of the total cost. The scheme was administered by the Department of Rural Development at the Centre and its counterpart departments at the State level It was financed outside the Plan in 1971-72 and as part of the Central Plan the Year 1972-73 and 1973-74. The entire cost of the scheme was borne by the Centre and released to the States|Union Territories as 100 per cent grant. During the three year period 1971-74 the Central assistance released was of the order of Rs. 122.6 crore out of a total allocation of Rs. 142.7 crore and resulted in creation of employment to the extent of 3160 lakh man days.

Evaluation Study :

The Programme Evaluation Organisation carried out in 1975 an evaluation study of the Crash Scheme for Rural Employment in 29 districts spread over 18 states. From each state to 3 districts were selected purposively, keeping in view the availability of staff resources and the time for field work. Thus the study caused 590 beneficiaries on 53 works. The study is aimed at understanding the impact of the programme on rural employment, the extent of creation of productive cassets, the extent to which income accrued to the weaker sections among the rural unemployed or under-employed, the availability of alternative sources of employment on public works through plan and non-plan activities of the Government. Besides, it sought to find out the nature of schemes or activities of the Government

Besides, it sought to find out the nature of sch activities undertaken, the quality of formulation plementation, the benefits arising out of inves the degree of the wastage or lack of comple works, etc.

Main Findings :

(i) It was noted that each State Governme evolved its own system for the alloca funds to different agencies and in d areas since the time given to States l preparation of feasible projects with general framework of the guidelines was short. Consequently, each State Gove evolved its own system for the all of funds to different agencies and to di areas.

(ii) The three most important schemes tak under CSRE were road construction, development and minor irrigation. A number of works undertaken were n surveyed in advance. The speed inten the programme did not perhaps perm tailed planning and preparation.

(iii) Although under the CSRE it was spe that the contractors should not be er for executing the rural works and that should be undertaken through direct ployment of lobour by the concerned cies, mainly block development and pa yati raj organisation Land Army in K taka and Labour and Development Ba Kerala, the normal agencies for the i mentation of public works were the neering or Technical Departments wo through contractors.

(iv) The number of works assigned to each o junior engineer was very large which re in the problems of effective supervision signing of tasks to the available task t timely measurement of work done an assessment of wages, regular drawing disbursing of funds and scrutiny of clair

(v) While the quality of execution of v carried through departmental agencies satisfactoy, the volume of CSRE work ha by these agencies, formed only an in ficant proportion of the total work as agencies were not designed for takin works by directly employing rural labou

From the experience gained in the executic CSRE works, it can be concluded that presently is no agency available for survey and executio rural works without the involvement of contracto

(vi) The larger States of Uttar Pradesh, Bihar and Madhya Pradesh had incurred expenditure above Rs. 10 crore each under the scheme during the three year period whereas small States like Manipur, Tripura, Meghalaya and Nagaland reported expenditure below Rs. 1 crore. It appeared that road work came very handy to the State Governments in implementing the programme in achieving targets of expenditure allocated to them, despite the guidelines that construction of road should be given the lowest priority Bihar and Tamil Nadu spent more than 99 per cent respectively of the total expenditure on the construction or repairs of roads

(vii) It was observed that out of 53 selected works investigated by the PEO, estimates had not been prepared in respect of 28 per cent of works. In respect of selected road works, n oestimates were prepared for as many as 41 per cent of these works Furthermore, the estimates on the labour potential of the work were not correctly worked out in respect of 60 per cent of the cases In 31 out of 53 works, variation in employment generation was more than 20 per cent of the estimated values

(viii) Mobilisation of labour was satisfactory in cases of only very few works. In majority of the selected works, mobilisation was lingering and of 'stop-go' nature.

(ix) The relative share of the wage and material components in the expenditure under the scheme varied from State to State Most of the States were well above the minimum proportion in which wage component could be permitted to fall, indicating that the emphasis on maximum labour mobilisation was successfully sustained. It was noted that among the larger States, the sole exception of variation from the norms laid down in respect of wage component was Uttar Pradesh where the percentage was abnormally low at 53 1

(x) The norm as laid down in the scheme was achieved only in five out of 29 districts selected for the study whereas in one district the norm nearly achieved in minor irrigation and land development work but not in respect of roads.

It was noted that the chances of fulfilling the norms by taking up road works as against taking up minor irrigation and land development works were 4 . 1.

The place of rural works projects should be viewed in the context of the overall picture of development of districts and the consequent needs for investment, rather than to be considered as needing implementation in all areas across the board.

Had the focus of the Programme been on land development and minor irrigation works rather than on roads perhaps larger benefits would have accrued to agriculture through the creation of durable productive assets.

Out of 5813 households contacted, 2342 households (40.3 per cent) reported participation in the CSRE programme. This itself was reasonably encouraging keeping in view the fact that many other programmes have not touched such a large size of the population. The number of mandays of employment per participating household was 101.6 in a year.

(xi) Irrespective of the size of works, the weaker sections of the village community, by and large, benefited more than others under the CSRE schemes. It is noteworthy that in 5 out of 17 works, there was no participation by others at all. The per capita man days of employment availed by the weaker sections ranged between 0.3 and 23.3 man days with an average of 7.1 man days. In respect of other sections of village population, the per capita man days employment availed was in the range of less than 1 to 17 man days with an average of 1.4.

(xii) Of all the categories of rural population, the participation of marginal farmers was lowest, being only 34 per cent of the total participating households. As between agricultural and non-agricultural labourers, the proportion of the former was higher at 47.6 per cent.

(xiii) The maximum participation was noted in the case of scheduled tribes. In respect of this group, the persons employed per household were as large as 2 : 2 : Also, the man days employed per household were the highest at 172.5.

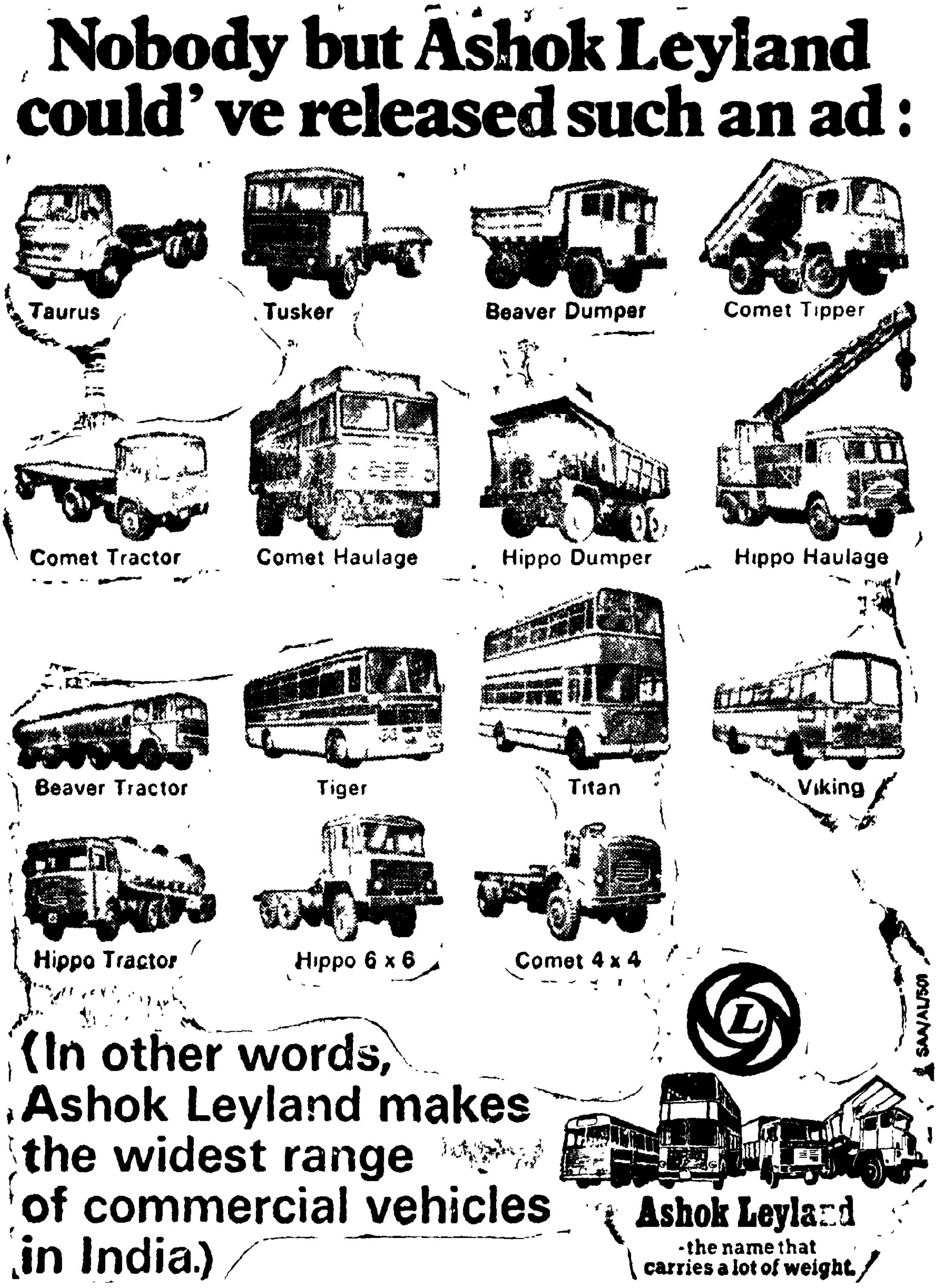
(xiv) There was no female participation at all in as many as 11 districts. In five districts, the female participation was less than 10 days of work per household.

(xv) The impact of the CSRE on incomes of the most vulnerable sections of village society was strongly positive in and around villages where the works were executed.

There is reason to believe that the publicity for employment under CSRE was inadequate as a sizable number of non-participants reported 'authorities did not call them' or 'they were not aware of the work' as the reasons for non-participation. 'Better wages elsewhere', contractual obligation' and 'preoccupation with their own holdings was the main reason given for non-participation by the Non-agricultural labourers, agricultural labourers and marginal farmers, respectively. Besides, there were a variety of unspecified reasons which went to account for 28 per cent non-participation.

Conclusion

The future strategy in respect of rural works should have the fullest agreement of State Governments in regard to its objectives, scope and size, duration, area of operation, financial obligations and the terms on which Central assistance would be provided. Given the strategy, a great deal of higher level and on-the-spot planning is required at the pre-implementation stage. The principles for determining the priorities for works at the local levels should be outlined. In order to ensure effective planning of works programme, it is necessary to create a shelf of schemes for a large enough volume of aggregate employment. For this, identification of agencies for the purpose of formulation of schemes and the norms on which the schemes would qualify for inclusion is necessary. Action should be taken for building up a proper system of accounting, monitoring and feed-back on the performance of the schemes and optimisation of benefit. □


Nobody but Ashok Leyland could've released such an ad:
Taurus
Tusker
Beaver Dumper
Comet Tipper
Comet Tractor
Comet Haulage
Hippo Dumper
Hippo Haulage
Beaver Tractor
Tiger
Titan
Viking
Hippo Tractor
Hippo 6 x 6
Comet 4 x 4
(In other words, Ashok Leyland makes the widest range of commercial vehicles in India.)
Ashok Leyland
-the name that carries a lot of weight.

Prohibition Amongst Tribals

Problems And Prospects

Rajiv Ranjan Prasad
Research Fellow
Department of Anthropology,
University of Delhi.

THE TARGET of achieving total prohibition in the country by 1981 has become one of the most challenging and prestigious issues of the present day administration. In their attempts to channelise the prohibitory measures, the authorities have made special provision for the tribals. But when this provision is pragmatically considered, distinct threat to the cultural life of the tribals and to the efficiency of the administrative machinery is perceived.

It is no doubt true that the Government, in its new venture, has pledged to give liberty to the tribals to manufacture alcohol for individual and social purposes. But this does not have any bearing on the discontinuing of vending of country made liquor in the tribal areas. Had it been the case in the pre-independence period when the Britishers had a policy of keeping the tribals isolated from the main currents of Indian society for preserving their socio-cultural identity, prohibition in the tribal areas would have posed no problem. But after Independence, the policy of the Government of India towards the tribals has been to assimilate them in the socio-cultural milieu of the relatively advanced societies.

Today there is hardly any tribal community in India, with the possible exception of those of the Andaman and Nicobar Islands, which is leading an isolated life. Due to the increasing contacts with the non-tribals, constitutional safeguards, job reservation, etc, the tribals have no longer remained that simple and innocent. The interaction between the tribals and non-tribals, mainly on economic terms, has increased considerably.

All this makes the issue of achieving total prohibition in the country a bit complicated because in the event of the total prohibition having been realised, except in tribal areas, the non-tribals would find the tribal villages a privileged place to drink countrymade liquor. The tribals who are generally economically backward will not hesitate to make good money out of this opportunity by manufacturing alcohol for commercial purposes. Hence, greater precision is required in introducing the prohibitory measures in the tribal areas.

But why should there be a relaxation with regards to the introduction of prohibitory measures in the tribal areas only ? This is so because the use of alcohol by tribals is intimately associated with their socio-cultural life. Most tribal communities use some sort of intoxicating devices, generally in the form of fermented and distilled beverages. The use of alcohol is specified by their social norms and values which vary according to the culture.

Alcohol is used by the tribals on certain occasions such as at the time of marriage, birth, deity worship, and while entertaining friends and guests. The use of different fermented and distilled beverages like arak, *chhung, chakti, chhauk, diang, handia, illi, langi,* etc by the tribals inhabiting the Himalayan borderland, Uttar Pradesh, Assam, and Bihar are intimately associated with their socio-cultural life.

It can be very well presumed that the root of all the evils in the tribal areas with regard to alcoholism lies with the non-tribals who provoke the tribals to indulge in vending of illicit liquor as easy means of earning money. Therefore, it is more relevant to keep a check on the non-tribals than on the tribals for discouraging the vending of liquor in tribal areas.

The plan to absord toddy tappers, after the introduction of prohibitory measures, in the khadi Industries for making gur, neera, etc., is quite convincing for it will put them in the right vocation. But this does not solve the problem of those families who have taken to the vending of countrymade liquor as a primary source of livelihood.

Checking the manufacture of alcohol by the tribals for commercial purposes is definitely important, but putting them in the alternative occupation is even more importont and difficult as well. Different tribal communities should be given to choose different alternative occupations only after taking their economic pattern and material culture, into consideration.

PROSPECTS

Probably it is not enough to say that greater precision is required in introducing the prohibitory measures amongst tribals. How actually prohibitory measures should be channelised in the tribal areas is the crux of this issue. Evidently, this poses a challenge to the social scientists in general, and to the anthropologists in particular; the latter often being referred to as 'tribologists'.

Tribal India represents a vast spectrum of cultural types. There are about 427 tribal communities in India (Census-1971). Each tribal community is governed by its own social system and traditions. In such a situation it is not proper to think in terms of having a common administrative strategy for prohibiting the commercial use of alcohol amongst tribals in the disguise of its ritual value. If a common administrative strategy for introducing prohibitory measures amongst tribals is theoretically unsound, then at the same time, there is no logic in saying that different tribal communities should be dealt with separately.

(Continued on page 21)

Timber Industry Forges Ahead

B. H. Lalwani

Freelance Journalist

FOREST produces a host of products. These are used as raw materials for various industries. Timber among them is the chief product. Timber finds many uses in furnishing industries, box making, ship decks making and in house building etc. House building consumes one third of total wood production. World's forests from commercial point of view can be divided in the following two groups. Soft wood forests accounting for 35 per cent of the total forest area and hardwood forests for the remaining 65 per cent of it. Soft wood forests are in plenty in the western hemisphere while hardwoods in temperate and tropical latitudes. Indian forests fall in the latter class. As compared to that of soft wood or coniferous forests, the extraction cost of hardwood forests is very high. Due to high cost the commercial exploitation of tropical hardwood is confined to the exploitation of the most valuable cabinet woods in accessible areas. While USSR is the chief producer of sawn wood from soft wood areas, Asia accounts for the biggest sawn wood producer from hard wood regions.

Forests in India, cover 7 53 lakh sq. kilometers which is about 23 per cent of the total land area of the country The major part of Indian forests amounting to 75 per cent is located in Peninsular India including Western and Eastern Ghats The productivity per annum is substantially low in comparison to the average yields of forests in other countries of the world. There is need to increase forest areas in the entire country and also to develop them in different states. We have fir, spruce and deodar forests at the high altitudes of Himalayan regions and at the lower elevations, oak, laurel like maple, birch, magnolia species etc. The proposed outlay of the 222 crores on forestry in the fifth plan reveals an alarming gap between the estimated supply of only 12 million cubic metres of wood for furniture and industrial needs against the estimated demand of 22 million cubic metres The annual output of timber is about 275 million cubic feet and of fire wood about 700 million cubic feet. India exports teak, rose and sandalwood to USA and European countries.

It has been held by the International Trade Centre that the export prospects for tropical wood are much brighter than for some other primary commodities. India is in a position to make even more profitable use of its forest resources by integrating produce and export of plywood and veneers. The consumption of plywood and veneer in Europe is estimated to have doubled during the years 1965 and 1975 while their local production could not keep pace with their demand. Among the developing countries, Congo, Gabon, Ghanna and Nigeria are the main suppliers of these products to Europe. India can also move into manufacturing (without making a big capital investment) and exporting these products.

Market researches reveal that most of the developing countries have barely scratched the surface of their export potential specially in respect of processed semi processed goods in which they have the com- petitive advantages of having a basic commodit a natural resource and abundant labour to pr it. Similar opportunities if explored can make I improve its position

Timber is an excellent example of a natural res ce that India possesses and it can earn her more f gn exchange if necessary steps are taken. Timber h a privileged positon among the traditional export ducts of developing countries. Timber exports growing much faster than the exports of most tr tional products Though there have been price d yet these are much less severe than suffered by m other agricultural products. The growth rates of s timber products have been spectacular. World exp of panels for example scored 150 per cent hike b ween 1954 and 1964 Tropical sawn wood consu tion is also growing much faster. UK alone acco for half of total world's imports of the product. Tro cal sawn wood exports to European countries in 19 amounted to 90 000,000 dollars a year and these growing at a comfortable rate of about 60 per cent year It represents substantial business to the expo ing countries There are reasons to believe that business can be grown more in future and that m countries can row in. Europe as a whole and t E.E.C. countries in particular depend on imports sawn wood to meet their rising consumption. Saw wood account for half of the tropical wood import by these countries. Under the right conditions, a high proportion of imports could be in the form of saw wood which obviously earns more foreign exchang than logs. If sawn wood were to increase its share tropical wood imports, it would obviously grow at faster rate. If for example tropical wood consumptio were to rise by 27 per cent as it did between 1965—7 (as present trends indicate) and if this entire increa were to be met by wood imported as sawn wood, th sawn wood imports would rise by 50 per cent. Th reason for optimism is the relatively low per capit consumption of tropical sawn wood in most of th E E C. countries which is rising rapidly. Hence, prospects for the construction industry are very bright.

Developing countries like India are not perfectly gearing themselves up to the demand of the markets Atleast half the tropical sawn wood imports into the European Economic Community come only from two countries-Malasia despite great distance) and the Ivory Coast The share of Latin America represented by Brazil and Chile is only 1 per cent. One reason for Malasia's success is that they have paid careful attention to quality grade and business practices.

According to the findings of an important study carried out by National Bureau of Economic Research U. S a developing country can move into manufacturing (without making a very big capital investment) for example plywood business or other primary pro-

ucts like timber and simple wood products which equire large inputs of relatively unskilled labour and ot products demanding a high proposition of skilled ibour or of capital investment. The findings point to igh quality for high profits. Another point is that ggressive promotion can sometimes increase consumpon of a product or atleast an individual exporting ountry's share in total consumption. In general the rospects for primary commodity exports are univourable. Moreover the trade has remained conceniated. A relatively few developing countries were aving large receipts Hong Kong alone bagged 28 per ent of 1965 total exports and altogether less develop-l countries of the Far East supplied two-thirds of it he trade has grown in recent years twice as fast as ie exports of basic commodities

A cursory observation might lead one to think iat there must be some special situation such as ommon-wealth preferences or US or Japanese inestment that accounts for the fact that a handful of ar Eastern countries have walked away with most of ie business. Though this could be true in one or two ases there is no crushing reason why India could lso not be successful with such export if it does not ose its labour cost advantage and if it organises proerly to seize the opportunities

The proper use of timber requires efficient forestry ianagement including fire control, tree planting and ther measures. Conservation and preservation of timer should be the watch word The real price of saw ogs had increased in US. Trends in the deflated prices f vaneer logs, pulpwood, fuel wood and minor products either have been stable or down ward Timber a renewable source only when forests produce econoically useful yields. Considerations about timber arcity and renewability suggest need for caution hile assessing its role in raw material needs Korea another prospective market for timber. Not all rests are timber resources and not all timber resource are renewable. In USA physically timber is not scarce. Harvest and inventory has increased simultaneously. Economically timber is also abundant except for one major product—saw logs The per capita consumption has declined over the years and the real price of saw logs has increased during the same period. Consumption patterns show a trend in favour of other wood products and non-wood products which are not economically scarce

It is in the full realisation of the immense economic value of timber that the government and the states launched special social forestry programmes to fully exploit a large part of tropical forests in India and to improve the economic welfare of the villages. Still we have not reached the optimum point like USA. Due to high transportation costs, mostly the exploitation of valuable species like mohogany, teak and iron wood can be a viable commercial preposition. The markets for timber lie at a great distance from the tropical hardwood forests It may be because of the lack of sufficient demand for timber within the country. The number of species of hard wood timber is large and have various uses India, China and Japan are rich in forest resources and in India about 23 per cent of the land area is covered by forests which are spread over Andhra Pradesh, Madhya Pradesh, Maharashtra, Orissa and Assam. Around 60 per cent of the cost of the programmes is paid to labourers, another 10 per cent to officers and other personnel. Altogether 16 central state Corporations are engaged in new plantation schemes providing villager with raw materials for developing forest based cottage industry as well as providing fodder for the cattle. Forests will continue to play a vital role by promoting internal economy and boosting our foreign export earnings. R & D programmes and the steps taken by government to augment our forest wealth assure a prospect future for our timber industry. □

Prohibition Amongst Tribals

(Contd from page 19)

It is, therefore, important to conceive the entire prosss in a formal frame. At the outset, a knowledge of e social setting and political system of tribals is cessary. This will help in designing the administrative rategy and in selecting the locus or unit of tribal ministration

For the proper propagation of the prohibitory easures in tribal areas, it would be desirable that e authority for all State actions must be derived from nong the tribals only, and the locus or unit of tribal ministration be the tribal 'village' The authorities sponsible for all State actions in this regard should er a path of change in such a fashion that the tribal b-system is not at discount This would not only ninish any possible threat to traditional culture but o the same culture will help the new system to ope-'e.

Most tribal societies are governed by their customary vs regulated through their village and clan/lineage adman who still hold the authority in social and igious matters. However, it is important that before roducing such a measure, tribals should be told about the significance of prohibition, probable consequences of violating the excise policies, etc by giving them vocational trainings at the special meetings of the tribal panchayat/caste panchayat, etc.

The following prohibitory measures, which are based on the above-mentioned points, may serve as an effective guide for the planners and administrators in achieving the desired goal.

1. Selecting the poorest family in tribal villages, preferably a widow, and giving them license to manufacture alcohol for individual and social purposes.

2. Empowering the 'pradhan' (headman) of the village or clan/lineage to keep full control on the production and supply of alcohol.

3 Rationing the supply of alcohol in terms of the individual's need and demand for a particular occasion

4 Giving alternative means of occupation to those tribal families who have taken to the vending of liquor as a primary source of livelihood While doing so, the economic pattern and material culture of different tribal communities must be taken into consideration.

5 Opening a community centre in the tribal villages in which tribals could find some means of recreation other than of alcohol consumption □

Development of Fisheries in Prakasam District

N. Subba Rao
Research Scholar
Andhra University, Waltair.

PRAKASAM DISTRICT in Andhra Pradesh has a coast line of 102 Kms. It ranks fifth in all the eight coastal districts of the state and forms 10.4 per cent of the total length of the coast line of Andhra Pradesh It is a virgin coast with a good depository of marine fishery resources. The district also has vast potential for inland water resources to develop fisheries. Yet, the fishing industry in the district lags far behind compared to other coastal districts, because of various reasons. Absence of infrastructure such as harbours, cold storage and ice plants, motor boats and nylon nets, transportation, marketing facilities is the main reason for this slow development. At the same time there is total absence of facilities for deep-sea fishing. Until 1970, no serious efforts had been made to harness the marine wealth. In 1972, the Government of Andhra Pradesh, set up a separate office the Assistant Director of Fisheries at the district hea quarters making the beginning of fisheries develc ment.

Fishermen and Fish Production

Chirala, Kandukur and Ongole are the three talu in the district which have the benefit of the coast strip of Bay of Bengal. Ramayapatnam, Kothapatnam Vodarevu, Chinna Ganjam, Pakala, Karedu and Ma danur are the seven important fishing centres in th district. They are spread over 43 villages wit a total fishermen population of about 25,000 of whom 7,500 are actively engaged in fishing. About 80 catamarans and 1200 country boats and other types c vessels are being used for fishing. The annual fis landings in the district are estimated at about 30,00 metric tonnes, valued at Rs. 2 crore. The usual type of fish found in this coastal area are prawns, cat fisl shark, ribbon fish, sysbiem, pomprets, silver belle The fish catch generally includes 25 per cent of hig class (14 per cent of fish and nine per cent of prawn) 55 per cent medium and 20 per cent low class fish. A Ongole and Chirala are the main fish consuming cen tres in the district, 90 per cent of the catch is utilise in these areas and the remaining is exported to Calcutt and Madras.

Large number of tanks and reservoirs in the distric provide vast scope for the development of inland fishe ries also. About 70 tanks under the control of Fishe ries Department are available for fishing. There ar four reservoirs, of which Kanigiri and Mopad are ma jor ones in which fishing is carried out. But the fisl catches in these reservoirs are poor and consist of onl minor carps, mussels and catfish. The tanks at Cum bum, Kanigiri and Bhavanasi managed by the publi works department, also offer vast potential for th development of pisciculture. However, adequate effort have not been made so far for the development o fisheries in these reservoirs and tanks.

Problems of Fishermen

The fishermen are poor and poverty stricken sinc generations. They still use catamarans, country boat and cotton nets which reflect their traditional method of fishing. They catch fish within a narrow belt of 8-10 Kms. and within the 10 fathom line. With these out moded boats and worn out nets, they cannot go deep into the sea. Hence a major portion of the sea i still uncovered.

Another problem of the fishermen is indebtedness to middlemen and money lenders. Since their income i inadequate to meet their needs, they have to depen entirely on money lenders who advance money with out interest, for buying new nets, for repair o craft and also to meet their household expenses. In re turn, the fishermen have to surrender their catch most ly prawn and class fish, at half the rates prevailing in the markets. Some other people (professional mone lenders) advance money at higher rates of interest keeping boats or even their huts as security If th fishermen failed to repay the debts, they have to fore go the same. In this way, the fishermen are being ex ploited.

At higher levels of Government, it was felt that the introduction of motor boats and nylon nets can in

crease their catch and in turn, will automatically raise their income levels. But as there are no harbour facilities in the district, mechanised boats cannot be operated. Moreover, the unsound financial position of the fishermen, paucity of technical knowledge and high risk involved in the operation and management of the boats and nets, shall not allow the fishermen to purchase the boats. Further age old customs, superstitions traditional methods of fishing are not allowing them to accept any change. So they are advised to take up fishing with Kakinada type navas and a few people have accepted the change.

Developmental Activities by the Government

Since the inception of the Fisheries Department in the district, it has undertaken a number of developmental activities for the promotion of the fishing industry. Majority of the fishermen have been brought into cooperative fold. There are 24 fishermen primary cooperative societies with a membership of 1968. The department supplies nylon yarn worth Rs. 1,60,000 with 25 per cent subsidy, every year For immediate transportation of fish, a sum of Rs 2 lakh has been provided to purchase two vans to be run by the Fisheries Corporation. Schemes costing Rs. 2.46 lakh are under consideration for establishing a small boat building yard, construction of godowns for storage of dry fish etc. A small unit of the boat building yard is functioning at Vadarevu

The SFDA has also taken up schemes to assist marine fishermen by giving 25 to 33.5 per cent subsidy and the branches of Syndicate Bank at Kothapatnam and Singarayakonda have sanctioned loans of Rs. 1.10 lakh for the benefit of 41 fishermen Schemes costing Rs. 12 lakh have been approved by the Backward Classes Finance Corporation and sent to Commercial Banks. These banks find it difficult to advance money as fishermen are not able to produce the required security. Construction of boat transfer jetty at Ramayapatnam is under consideration and if the construction is taken up mechanised fishing also will become feasible. One unit of the fish meal plant is also under the consideration of the Government, to be set up either at Vadarevu or Ramayapatnam

The fish meal, besides earning foreign exchange to some extent can also be used as poultry and cattle feed. There is a proposal to establish a fishing harbour at Ramayapatnam in Kandukur taluk as per the suggestion of the Joint Survey Team consisting of both foreign and Indian harbour experts. The estimated cost of this project is about Rs. 5 crore which would be met by the Central Government. The establishment of this harbour, would require an investment of Rs 5 to 10 crore for providing the necessary infrastructure facilities by the State Government, and would give a boost to the development of fisheries in the district

For increasing fish production in inland areas the department is supplying quick growing varieties of fish seed to the Fishermen Cooperative Societies, Panchayats and private fish culturists to stock in their tanks and to reap a rich crop. The department is issuing free licences to the fishermen residing in surrounding villages of Cumbum to fish in Cumbum reservoir and stocking of the reservoir is also being done by the department, free of cost. A fish farm is likely to be constructed near Addanki at a cost of Rs. 1 lakh.

Members of cooperative societies get lease of tanks on average rentals and are given yarn and other essential commodities. The department is supplying nylon yarn worth Rs. 12,000 on 50 per cent subsidy, to inland fishermen every year. If the Cumbum reservoir is developed properly, it can meet the demand of the fish eating population of big towns in the district. The branches of State Bank of India at Cumbum and Giddalur have given loans amounting to Rs. 41,350 to 145 fishermen (licence holders of Cumbum reservoir) to prepare nets and Backward Classes Finance Corporation has released 20 per cent margin money.

Some Suggestions

As mentioned earlier their income is meagre because of low catches. So, there is imperative need to replace the existing country craft On the other hand the low purchasing power of a fisherman will not allow him to buy a costly boat. So an intermediary technology, which is suitable to the coast, should be provided on subsidy basis. They should be provided with nylone yarn on loan-cum-subsidy basis, repayable in easy instalments and with normal interest rates. Procurement centres should be opened at each village by fixing reasonable prices depending on the size and variety of fish in addition to the prawn. Feeder roads should be constructed at every village by joining them with important marketing centres and transportation facilities should be provided with minimum charges. The existing methods of curing, salting and drying the fish are antiquated and need to be modernised. The existing Cooperative Societies are not running on sound lines. Hence, they should be revitalised with qualified personnel. The fish tend to be spoiled quickly, hence cold storage facilities also should be provided. Steps should be taken for the effective utilisation of fish in the local and adjacent areas.

The tanks and reservoirs should be fully exploited by leasing-out them exclusively to Cooperative Societies and more quantities of improved varieties of fish seed should be provided. Prawn culture centre should be opened in the district.

However, the Government of Andhra Pradesh is taking keen interest in fisheries development. Fortunately it has entered the export market to meet the demand for prawn and earning much foreign exchange. The Fisheries Corporation has opened one procurement centre at Vadarevu for collecting the prawn by paying reasonable price to the fishermen. The Government should also probe potential markets abroad for other varieties of fish ☐

Settlement Of Refugees In Karnataka

S. N. Bhattacharyya

NESTLING at the foot of Coorg hills near Bylakuppe, Kushalnagar is a small town, at the border of Mysore and Coorg districts of Karnataka. Its inhabitants, the refugees of Tibet, have converted this, at one time a forest area into a land of golden paddy fields, fish tanks and trees laiden with jackfruits, mangoes, papaya and bananas. Clusters of bamboo trees now add to the scenic beauty of the place.

Many years ago, a group of Tibetans followed His Holiness Dalai Lama to India. Kuncha Tundu, a bright young man whom I happened to meet in a coffee house in the area, is one of them. "Nanu estu koda beku?" (How much do I have to pay?), his broken Kanarese drew my attention He was only 10 years old when his parents came to India They spent a few years in Kulu and Manali areas of the Himalayas before coming down to Karnataka. He was lucky to get a scholarship and studied at the Indo-Tibetan College of Banaras Hindu University. He has now come back to the refugee colony to do his bit for his community. As I discovered later this attitude of the younger generation of the Tibetans in India is the main reason behind the success of refugee resettlement.

I accompanied him to the settlement. There are a number of such colonies. I met at least half a dozen young dedicated workers religiously attending to their assigned task. There was no Government official nearby. Only the Administrator's office had a peon. They are, I learn, not required any more. Refugees after initial help from the Government, are now on their feet. They have their own tractors, cars, scooters and cycles. Old paintings depicting drowsy Tibetans, with mules following, trekking slowly up the winding mountaneous paths of the Tibetan plateau, look anachronistic now.

"Excuse me", I was chatting with the Secretary of the Agricultural Credit Cooperative Society of the colony, "I have the impression, I do not know how I got it, that the Tibetans are, well, a bit lazy".

He was not offended at the question. With a fleeting smile he answered : "May be because of the propaganda by vested interests. In fact, it is not so. Our forefathers had to work hard for a living in that extreme climate of Tibet and we are working hard here to make a good living."

There is no doubt that they are a hard working lot—all of them. Kesava Murthy, a Kanarese living in the nearby village testified : "The refugees felled trees in this jungle area. Tilled their own land and tended their own cattle. Never hired a person to carry luggage. May be anybody old men or women they carrying their own trunk or bedroll."

The first camp of the refugees, there are five now, started functioning in 1962-63. Each family was given three to five acres of fertile land. River Cauvery and her tributries, though not very far off, flow towards other directions. But rain though a bit erratic, is good enough, about 100 inches a year. They themselves cleared the area and were paid for their work. For three years they toiled and sweated and got their subsidised ration. Afterwards each family was given land and bullocks for agricultural operations.

About 8,000 refugees are now settled. The second new settlement is operating since 1968 and has 500 families with a strength of about 3,000 persons. In village Gurupara near Hunsur about 2,400 refugees were settled in 1971. Chowkur camp was opened in 1975 with 300 people. In 1976, the village Udaipala of Kollegal Tehsil absorbed 500 families. Another three hundred families are expected soon.

The Union Ministry of Rehabilitation in cooperation with the State Government of Karnataka selected, after due consideration, this area at least 2,500 km. crow fly away from the homeland of the Tibetans Now India is their home and they are trying their best to adjust themselves in the changed atmosphere. But they have not given up their old culture and values, there are many monasteries with flags indicat-

ing verious sects, fluttering on their tops. So also are schools where Tibetan history along with modern elementary science are taught. Students, boys and girls, in these co-educational institutions learn rudementary agriculture, animal husbandry, simple engineering, cooperative methods and principles, etc.

Local Kanerese people are happy with their neighbours who still maintain some ancient Indo-Scythian customs. They are as good Indian as we all are. There has been no inter-marriage as yet between a Tibetan and a Kanarese, but these handful Tibetans have undoubtedly cast a great influence on the local people in a variety of ways.

Nirmal Wesley, an Animal Husbandry expert working with the State Government, elaborated the point further. Besides raising two good crops—agriculture is a gamble in rain so far as this area is concerned—the Tibetans method of rearing cattle is a lesson to the vlilagers around. They really worship cows in the sense that they look after them like members of their family. They buy sickly indigenous cattle at a throw-away price and feed and tend them well. Within a year it turns into such a prize bagging animal that the seller may not mind paying three times for the same animal he sold a year ago. But they do not sell it back for money They have already formed a coperative society for collection of milk from individuals and selling it to the chilling plant at Kudige built under Indo-Danish Dairy Project. Now they are going in a big way for well known cross-breeds like Jersey or Holstein. Introduction of these improved varieties will revolutionise the milk production of the area within a very short period They have a legendry weakness for the home-made dry cheese or Chara which they enjoy like children munching lozenges

Moreover they have proved to be masters in raising wealth from waste. Nothing is unimportant to them. They even buy old articles like cans or coloured pieces of paper and convert them into colourful decoration items. They don't go for rag-pciking but convert many useless things into useful household items.

There is a Weavers Coperative Society also. The society make dresses and supply to the refugees at cheaper rates. Some time back they took to carpet manufacturing—through a cooperative society and it has already become a foreign exchange earner. It gets raw wool from far off places like Ludhiana in Punjab An improved variety of sheep, being introduced, will undoubtedly make this cooperative self-supportin gin 'rawwool. A show piece of their cooperative activities in the colony, is a Tractor repair workshop. It has a ppol of 28 tractors donated by the Government of India and the Swiss Government. Tibetans themselves repair these machines. It is these tractors that haveturned this forest area into a green valley.

The Norwagian Government has also come to the aid of the refugees. Philanthropic organisations like CARE (Cooperative Assistance for Relief Everywhere) or MYRAD (Mysore Resettlement and Development Agency) with its headquarters in Bangalore and financed by many international organisations, is in in the financed by many international organisations, is in the forefront, lookig to the eeds of thes refugees.

But the main asset of the refugees is their undaunted spirit. They are very meticulous too. They are careful to see that all assistance is utilized in a remunerative way. They all work and get their share Work is something like worship in the settlement. Nationalised banks have opened their branches in this small colony. It shows that the Tibetans have proved economically viable within a decade.

A Unique Co-operative

P N Krishna Pillai
F. P. O. Alleppey

THE role that our rural women can play in building up the Co-operative system on healthy lines is amply illustrated by the successful functioning of the PARUR WOMEN'S CO-OPERATIVE SOCIETY in Kerala.

Started in a small way many years ago, this enterprise, stated to be the only one credit co-operative society rum by workmen in the State, has developed itself as real "shield for the weak". Over 1600 women belonging to the middle and low income groups are members in the Society Its working capitan is nearly Rs. 5 lakh, including deposits to the tune of Rs. 3 lakhs and share capital of Rs 1 5 lakhs. The Society has so far disbursed loans totalling Rs. 4 lakhs. A member can get a maximum loan of Rs 1000.

The Society owns a beautiful office edifice in the heart of the semi-rural Parur town in Ernakulam district

Impressed by the effective action programmes and efficient functioning of the Society, the State Government contributed a sum of Rs. 10,000 towards share capital during 1977-78. Utilising this amount, the Society distributed milch cows to 15 housewives belonging to the low income group The beneficiaries are now repaying the loans in easy instalments.

To foster the spirit of thrift and saving among rural women, the Society is running a series of 'Chitties'. Distribution of controlled cloth is another major activity of the Society. In addition, under the Central Scheme for distribution of essential commodities in the country-side, the Society is running a 'Janata Shop' in Ezhikara village in Parur Block since February last. The entire business of the Society is manned and managed by women.

As part of its efforts to promote self-employment among the weaker sections, the Society has so far distributed over 100 sewing machines, on credit basis. to needy girls.

A dedicated band of educated women under the stewardship of the President, Smt. P. Saradamma, a retired District Education Officer, is now shaping the destinies of this pioneering venture of rural women, which has emerged as a pace-setter in co-operative moment and is poised for self-reliant growth.

Economy of Meghalaya

Dr. Dharani Dhar Mali
Head, Economics Deptt.
Sankardev College, Shillong

MEGHALAYA, one of the youngest states of India came into being as a full-fledged state on January 21, 1972. The total geographical area of the state consists mostly of mountainous terrain with narrow valleys in between and strips of plain land adjoining Bangladesh on the south and Assam on the north.

Land

The state is bounded on the north by the Goalpara, Kamrup and Nowgong districts, on the west by the Goalpara district of Assam and Bangladesh, and on the east by the Karbi Anglong and the North Cachar Hills districts. In the south it has a common boundary with Bangladesh.

The state can be divided into three natural sections, namely, the Central Plateau, the Southern Border area and the Northern Border area. The Central Plateau forms the highest region of the state between the elevation of 900 to 2000 metres. The Southern Border area streatches downwards from where the Central Plateau ends towards the plain of Bangladesh. The Northern Border area is a continuation of the Central Plateau on the northern side and merges with the plains of Assam.

Climatic condition of the state varies from place to place, because of differences of elevation from the mean sea level. They range from the subtropical to the semi-temperate The climate of the Shillong plateau, for example, is more pleasant than that of Tura. The soil is lateritic in the foothills. Above 500 metres it is mainly podsolic. The areas in the southern slopes are mostly in the layer of lime-stone belt. In the northern slopes it is mostly podsolic and heavy red loamy.

Meghalaya falls under the heavy rainfall zone. It enjoys the distinction of having two of the wettest places in the world, Cherrapunji and Mawsynram. The Mawsynram-Cherrapunji-Pynursla belt in the Khasi Hills records a rainfall of 1,300 to 1,500 centimetres a year. Rainfall as much as 2,000 centimetres and even higher is recorded in this belt.

Population

According to the 1971 census, the population of Meghalaya was 10,11,699 as against 7 69,380 recorded in the 1961 census. The decennial growth rate was 31.50 per cent as against 27.03 per cent in the preceding decade. The sex ratio in Meghalaya exhibits the same tendency as in the all India sex ratio, the ratio between male and female being 1000 942. The density of population is 45 per sq. km, the rural figures being 39 and the urban 3852 per sq km. The density of population in the Garo Hills 50 persons per sq. km, is higher than that in the Khasi Hills. But the density of urban population is heaviest in the Khasi Hills, 4525 per sq km. The density of population in Meghalaya is comparable with other hilly areas such as Manipur, which has 48 persons per sq. km, Himachal Pradesh with 62 persons and Nagaland with 38 persons per sq. km The density in urban areas is comparable with areas showing similar density, namely, the Kanpur city corporation (4413 persons), Poona Urban Agglomeration (3498 persons) per sq. km. The percentage of literacy in Meghalaya is slightly better than the all India percentage. The all India percentage is 29.46 and the percentage for Meghalaya is 29.49. But the literacy in the rural area is only 23.40 per cent. Moreover, the literacy in the rural areas varies from district to district In the Khasi Hills, it is 26.77 per cent, in the Jaintia Hills 17.25 per cent and in the Garo Hills 21 88 per cent. The tribal population constitutes the overwhelming majority in the state, being 80 48 per cent of the total population of the state.

Jhumming

Nearly 82 per cent of its population depend on agriculture But only 8.2 per cent of the total geographical area of the state is available for cultivation, and only 13 per cent of the cultivated land produces more than one crop.

The method of cultivation primarily is jhuming or shifting cultivation. The characteristic features of such cultivation are the rotation of fields rather than crops, clearing of fields by means of fire, and use of human labour without the help of animals. There is neither the use of artificial irrigation nor manure The initial investment in shifting cultivation is small A jhum field is occupied for a short period, then it is left fallow for a long period to regain its fertility by natural means. The period of fallowing depends upon the pressure of population and the availability of land The jhum cycle estimated for Meghalaya by the North Eastern Council is 5.47 years. The area under shifting cultivation in the north eastern region is about 4,57,000 hectares. In Meghalaya, approximately 76,000 hectare or 18.46 per cent of the total geographical area of the state is put annually under shifting cultivation

A variety of crops are grown on the jhum field. The crops depend on the agro-climatic conditions of the area the needs and food habits of the people. The crops include high land paddy, maize, millet, job's tears, fox tail, local beans, tapioca, arum, yam, potato, sweet potato, tobacco, chillies, ginger, cotton, sesamum, and vegetables.

Rice is the most important crop grown in Meghalaya. It is grown throughout the state. The best variety of rice is produced in the Sung area, near Jowai, the district headquarters of the Jaintia Hills. In 1974-75, the total area under different varieties of rice was 1,00,140 hectares. Maize is next in importance as food crop. The total area under maize cultivation was 18,000 hectares in 1974-75. The cultivation of wheat was almost negligible a few years back. In 1973-74 the area under wheat cultivation was 615 hectares. But it increased to 1500 hectares in 1974-75. Among the different varieties of oil seeds, rape and mustard are important. Sesamum and castor are grown in a smaller scale. Among commercial, crops potato is the most important one. Potato was first introduced in the Khasi Hills by David Scott in early 19th century. Apart from its value as food crop in the State, the potato as seed tuber has a good market in the neighbouring states. In Meghalaya, the potato crop can be raised 3 to 4 times a year. This cycle is unmatched anywhere in India. The area under potato cultivation is 18,000 hectares. The average annual production of potato is about 74,000 hectares. Ginger, turmeric are other important commercial crops grown in the state.

Meghalaya is a land of fruits. Important among them are pineapples, oranges, bananas, plums, pears, peaches, apricots. The pineapple grown in Meghalaya is considered to be the best in India. Many types of bananas are produced in Meghalaya and such rare varieties like kait mon, kait jrong are grown only in the khasi Hills of the state Good quality oranges are also produced in the state. Dr. Tanaka, a Japanese expert, stated that orange cultivation originated in the Khasi and Jaintia Hills.

Meghalaya possesses potential for the development of agriculture. But there are many problems. There is the problem of jhum cultication. Jhum cultivation is uneconomic and wasteful. Per unit production is very low ; it is about one fourth of what can be produced in the same area under permanent cultivation Effective solution of this particular problem is called for. Moreover, agriculture production in the state is influenced by monsoon and other natural factors. Irrigation and marketing facilities are inadequate due to difficult terrain. The existence of customary land laws and the absence of land records also hamper the growth of agriculture.

Rich Forests

The state is rich in forest resources. Forest covers 8510 sq. km. or about 37 per cent of the total geographical area of the state. Shifting cultivation and exploitation of timber for daily [illegible] ed the number of forests in the [illegible] human habitation. In some of the [illegible] rare medicinal plants are available. There [illegible] species of valuable flora and fauna also.

The management of forest in the state is mostly in the hands of the District Councils, community, clans and individuals. The setting up of large scale industries based on forest resources may not be feasible but small scale industries can be set up for the benefit of the people.

Industries

Meghalaya is industrially backward inspite of its vast potential. The state has mineral, forest and agricultural resources. Inspite of these resources the state has only one large scale industry, namely, the Mawmluh-Cherra Cement Ltd. The Meter Factory is another large factory, at present not working. The Government of Meghalaya has taken steps for the expansion of the capacity of the factory to 950 tonnes of cement per day. Next important industry is the coal mining. The production of coal in the Khas Hills was started at the beginning of the presen century The industry experienced a boom durin 1960s. Huge deposits of limestone were lying untap ped along the border of Bangladesh, mainly becaus of the difficulties of transport. But the emergence o Bangladesh as a sovereign state has prompted th setting up of a company, namely, the Komorrah Min ing Ltd. to continue the supply of limestone to th Chatak Cement Factory in Bangladesh. A plywoo factory at Burnihat has been set up for the manufac ture of plywood and allied products. The plywoo factory enjoys the distinction of being the first mediur scale industry in the state. In 1974-75 there wer altogether 45 factory establishments in the state registe ed under the Factory's Act, 1948.

Mineral Resources

The state is endowed with rich mineral resource Minerals found in the state are coal, limestone, sillim nite, clay, kaolin. The presence of other minerals lil quartz, feldspar, corundum, glass sand, pyrites. pho phates, uranium and germanium are reported. Arour the Barapani area, 15 km. from Shillong, along tl Shillong-Gauhati route, a metallic deposit containi traces of gold, copper, zinc, lead, nickel and uraniu is reported. Geophysical work is now systematical carried out in this area to determine the value of tl various deposits. The estimated reserves of limesto and coal in the state are 2100 million tonnes a 1197 million tonnes respectively. In the Garo Hi alone the known reserves of coal are more than thousand million tonnes. The exploitation of mine resources are hampered mainly by the lack of pro and adequate transport facilities.

Power

The potential for the generation of hydro-[illegible] power in Meghalaya, including the Kopili V[illegible] 2.2 million KW. The installed capacity of [illegible]

in Meghaaya is about 6,52,000 KW. Till 1957, Shillong received its power supply from a small waterfall, Beadon-Bishop fall. In 1957, hydro-electricity was generated at Umtru. The next important hydroelectric project to be commissioned was the Umium Hydro-electric Project. he first stage of this project with an installed capacity of 36,000 KW. was commissioned in 1965. The second stage with an installed capacity of 18,000 KW. was commissioned in 1970. A few other projects, such as the Kyrdemkulai project, the Garo Hills Thermal project are being implemented. The Kopili Power Project is another power project being constructed by the North Eastern Council.

Transport

Transport is one of the main problems of Meghalaya. As the terrain is hilly, there is little possibility of introducing water transport. It will probably take time to connect Meghalaya by rail. A reconnaissance survey to study the feasibility of extending the rail link from Gauhati to Burnihat was carried out in 1974-75. The construction of this rail link will help in the development of the state. Air services were introduced in the state in 1975 and these were operated by a private company. The idea of placing Meghalaya on the air map was two-fold : one was to help the local population to export its produce and the other was to attract tourist traffic to this region But recently the air services are stopped.

At present the road ransport systems the lifeline of the state. Inspite of this, the development of roads has not been rapid At the commencement of the Fourth Five-Year Plan in April, 1969, Meghalaya had a total road length of 2639 Km. According to the 20 year road plan drawn up for the country as a whole, the minimum requirement of motorable roads in Meghalaya is 6289 Km. by the end of 1981. The road transport services in most of the routes are being run by the Meghalaya Transport Corporation.

Meghalaya is one of the backward states of India. But there is scope for its development and can be made one of the prosperous states. For the development of agriculture, there is need for the effective solution of the problem of shifting cultivation. In this respect a welcome change is noticeable among the villagers. Many villagers now do not like to take to shifting cultivation. The measures taken by the government and the pressure of population might have changed the attitude of the people. For improving the lot of the agricultural population of the state encouragement should also be given for animal husbandry and for the development of horticulture. There is scope for their development. These will provide the agriculturists with subsidiary occupation. Natural resources, particularly various mineral resources are available in the state. For the exploitation of the mineral resources the main problem is the transport. The transport bottleneck is to be removed. The state has also the potential for attracting tourists and can be made a tourist paradise. Development of tourism will give a boost to various types of industries. There is no central sector protect in the state. The central Government may set up certain central sector projects. The development of agriculture and industry and the removal of transport bottleneck will go a long way in making the state a prosperous one. □

'Midhani'

B. N. Murty

Our Senior Correspondent

.Hyderabad

INDIA is one of the eight industrially-advanced c tries in the world. During the last 25 years grated Steel Plants have been set up and non-fer metallurgical industries, such as alluminium, co and zinc expanded. These industries have he to create a suitable infrastructure for further dev ment and, consequently, a number of engine industries have come-up. However, sophistic metals and alloys required by these industries are to be imported. Mishra Dhatu Nigam, (Midhan public sector enterprise, being set up at Hyderaba the Government of India is meant to fulfil this ga With the inauguration of the Power Metallurgy Sh the first production unit of Mishra Dhatu Nigam the Deputy Prime Minister and Defence Minister, Jagjivan Ram on 15th April 1979 at Hyderabad, I has launched a centre for advanced metallurgical duction of special metals and super alloys. MIDH has now created a nucleus for sophisticated m technology in the country.

The MIDHANI Project is one of the most mo with highly integrated facilities. The project will have extensive vaccum and special melting facil a quick acting computer-controlled forging press, and cold sheet and strip mills, which can dc products of very high precision. Particular me should be made of the wire drawing facility, w can draw wires even thinner than the hu hair.

The manufacturing programme of MIDH includes nickel and cobalt base super alloys, strength iron alloys, special stainless steels, tita and titanium alloys, magnetic alloys, tungsten molybdenum products. It is, indeed, a matter of satisfaction to note that these alloys will be prod in the country for the first time. With the indige manufacture of these alloys, a major constraint i growth of aircraft industry would be removed.

The work on MIDHANI project started in ruary 1976 within a period of three y has made impressive strides. The tungsten molybdenum plant has been commissioned ahea schedule in March 1979. At present, about 600 sons of varied qualifications are working in this pr and, of these, about 180 are Engineers. By the b ning of 1980, the strength is expected to reach 1 when the second phase of the project will be take

With the commissioning of the Mishra Dhatu N at Hyderabad in Andhra Pradesh, the country e an era of sophisticated metal technology. MIDH will not only promote growth of industries base these metals and alloys, but will also have impc fall-outs in promoting advanced research and te logy development work in the country. MIDHAI thus, unique in concept and will be reckoned not as a special metals manufacturing unit but also Advanced Metals Technology Centre in the countr

Integrated Rural Development

Commitment and Policy-Frame

A. R. Patel
Agricultural Economist

IN MANY CASES vested interests operate to ensure not only that the benefits of productive activity are distributed inequitably, but that the poor are denied access to inputs, services and organisation which would allow them to increase their productivity.

Better food supplies and nutrition together with basic services such as health and education, can not only directly improve the physical well-being and quality of life of the rural poor, but can also indirectly enhance their productivity and their ability to contribute to the national economy

Where technology is available it is frequently not applied because extension services, support services, finance and marketing facilities are lacking.

The planning and implementation of rural development programmes involve adequate regional planning, strong central coordination, effective local level organisation and the participation of the rural people in the planning and implmentation process.

ABJECT POVERTY, gross inequality in the distribution of wealth and income chronic unemploynent, squallor, want, ignorance and appalling insaniary and sub-human conditions of living are still leep-rooted in rural areas in India. Rural developnent has, therefore, come to be realised as a sine qua non for national development and social welfare. The problem is not merely one of the development of rural areas but the development of the rural communities to dispel ignorance and poverty and assist the process of creating self-reliant and self-sustaining healthy modern communities. Our villages need adequate food, clothing, sanitation, health care and primary schools. In brief, they need to make the village environment hospitible to man where children can grow up happily and healthily and develop themselves to the fullness of heir potential. The Sixth Plan, therefore, has accorded he first priority to rural development with emphasis n development of agriculture and allied activities and ural industries.

Low Level of Rural Growth

Why rural growth has been slow and rural poverty as been increasing? Most of the low income groups n the rural areas depend heavily on agriculture for heir livelihood. The poor suffer from limited access o natural resources. More frequently they suffer ecause they have little access to technology and services and because the institutions which would sustain a higher level of productivity are lacking. In many ases vested interests operate to ensure not only that he benefits of productive activity are distributed inequitably, but that the poor are denied access to inputs, services and organisation which would allow hem to increase their productivity. Main constraints n their development arise from (i) dependence on griculture for livelihood, (ii) importance of nongricultural sources of income, (iii) compounding effects of natural calamities. There are times—typically after floods or drought have runied the harvest—when virtually the entire population of a large area is seriously affected. Drought prone areas of India which cover about 6,00,000 sq. km. have a population of approximately 660 lakh. The bulk of this population is engaged in a perennial struggle to meet subsistence needs in a generally harsh environment. Within this broad-zone drought has occurred in three to four years out of every ten—with good and bad years tending to cluster together. The succession of drought years has severely affected the harvest and has resulted in absolute poverty for more than 500 lakh people or three-fourths of the total population of the zone, (iv) small and fragmented holdings, (v) tenants and share croppers, (vi) landless and other rural workers.

Rural Development Strategy

Rural development is a strategy designed to improve the economic and social life of a specific group of people. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small farmers, tenants, landless, rural artisans, scheduled castes and scheduled tribes. Since rural development is intended to reduce poverty, it must be clearly designed to increase production and raise productivity. Rural development recognises, however that improved food supplies and nutrition together with basic services such as health and education, cannot only directly improve the physical well-being quality of life of the rural poor, but can also indirectly enhance their productivity and their ability to contribute to the national economy. It is concerned with the modernisation and monetisation of rural society and with its transition from traditional isolation to integration with the national economy. The objectives of rural development encompass improved productivity, increased employment,

higher incomes, as well as minimum acceptable levels of food, shelter, education and health. The first need is for greater insight into the characteristics of target groups and the dynamics of traditional societies as they begin to modernise. This is simply a need for information on how many people they are, where they are, and perhaps who they are, about their skills, resource ownership, incomes, nutrition, health, fam ly structure and general socio-economic environment. These are to be collected through surveys.

Research should be conducted in order to learn better what motivates people in rural areas, and how they might react to broad policy decisions. Studies to help in (i) designing and evaluating key features of integrated rural development projects, (ii) analysing the effects of rural commodities of different development policy instruments (iii) identifying these features of successful projects which can be replicated in other rural areas and (iv) more generally, prviding an efficient feedback system so that project experience may increase knowledge and understanding.

It is also important to have more information about the resources available for exploitation by the rural poor and others. The programmes have therefore to be characterised by careful definition of the needs and resources of the target population; detailed planning of preparation and implementation, phasing of multisectoral components; and extensive adjustments or complete restructuring of related institutions.

The experience of rural development programmes and projects appears to confirm that it is possible to reach large number of the rural poor at moderate cost, with reasonable expectations of acceptable economic returns. For achieving this, (i) it should involve political commitment to a strategy for rural development and to the general policies necessary to support such a strategy, (ii) low-cost delivery systems for supplying inputs, credit, extension and marketing services is of crucial importance. Community activities should be organised so as to reach large number of the rural poor. Greater use of special financial intermediaries, co-operatives community groups and farmers' associations should be explored, (iii) equitable and adequate provision should be made for the recovery of costs in order to provide funds for additional rural development projects in other areas, (iv) technical packages have to be devised, appropriate to the requirements of small farmers and based on adaptive national reserach., (v) it is necessary to improve knowledge of national resources and provide an improved flow of disaggregated information as basis for realistic national, regional and rural project planning (vi) although increases in output can be achieved with existing technology, increases in productivity will require new technology suitable for use by small farmers.

IRD in Sixth Plan

Our plan decoument (1978-83) has aptly recognised that the distribution of unemployment and poverty and the potential for development of agriculture and related activities vary widely from region to region and also within regions. Different areas in the country are at different levels of development and have varying degrees of potential depending on local endowments. The efforts have now been to make the programmes area specific and utilise the local endo ments for growth, for social justice and for full ployment. It is, therefore, considered necessary to for integration of various programmes and estab appropriate linkages for optional utilisation of lo endowments consistent with the plan objectives, lo needs and environmental balance.

The new approach therefore, aims at integrating fi programmes reflecting the economic activity of rural family whose employment and development the basic objective. This is to be brought about developing the primary, secondary and the terti sectors. In the primary sector programmes for agric ture, animal husbandry, fisheries and forestry devel ment would be intensified. In the secondary sec programmes for village and cottage industries as v as small scale industries, skill formation and suppo ing services would be sub-stantially enlarged a strengthened. Tertiary sector would be developed creating facilities for organised marketing, processi and allied activities so as to absorb increasing nu ber of local people.

The following developmental programmes would initialy integrated :

(1) Programme of agricultural developme including efficient utilisation of land a water resources with scientific technolo available.

(2) Programmes of animal husbandry as a sub diary occupation mainly directed to sm peasant households so as to maximise uti sation of by-products in the farms and the same time aiming at commercial man facture of animal husbandry products. Nece sary infrastructure for commercialisatio would be inbuilt in the programme.

(3) Programmes of inland water and bracki water fisheries to maximise output of fish p unit of water and develop as an importa occupation for the fishermen classes ar such other backward classes in the econom

(4) Programmes of marine fishery including ha vesting of natural resources through trawler machanised boats and country boats keepi in view the need to maximise employment the poorer section of the fishermen popul tion and preventing unhealthy competitic among the three sectors to the detriment the poorer classes.

(5) Programmes of social forestry to provide base for fuel and fodder in the economy ar with special earmarking of usufruct for t poorer sections of the community for explo tation as an occupation or as fodder for a animal husbandry programme, Tasar, e muga and lac rearing by the poorer sectio should be inbuilt into the programme.

(6) Programmes of farm forestry through th small peasant house-holds as a subsidia income and also for maximising use of lan

(7) Village and cottage industries including han looms, sericulture, bee-rearing etc. as a fu or part time occupation to the artisan class of the rural population.

(8) **Service sectors of the rural economy** as self-employment for the poorer families both as a means of providing for a felt-want in the economy and as a means of better livelihood to the poorer section.

(9) **Labour programmes** of skill formation and labour mobility to meet the needs of organised labour for development works and of the nature of employment guarantee programmes where necessary.

Programmes of agriculture, animal husbandry, fisheries and forestry would be brought into focus in one compact form of maximising land water and cropping in a holding through a mixed farming approach. This would be the core of the IRD programme. The main thrust in agricultural development would be CAD in irrigated areas and water-shed management in rainfed areas. As further experience is gained on the nature of local resource and the socio-economic factors for and against growth, programmes would be refined through local planning.

Policy frame

Policy aimed at ensuring a flow of new field-tested technical knowldge relevant to small holder production are essential for the success of rural development. Where technology is available, it is frequently not applied because extension services, support services, finance and marketing facilities are lacking. Research and demonstration on a local basis to facilitate adoption is required in all these areas. A constant flow of new, field-tested technical knowledge relevant to small holder production is a pre-condition for the continuing success of the rural development programmes. Many of the poor live in harsh environment where investments would produce little extra income until technological discoveries create reliable new opportunities. Major improvement in production technologies and product mixes must be evolved for aridlands, hilly and tribal regions, areas of low productive soils where shifting cultivation is practiced and rain forest areas.

In appropirate research programmes and the inadequancies of adaptive research and extension have in many cases been major factors limiting the benefits reaching poor farmers. Expanded technical and economic research into small farm system, and into crops and techniques generally appropriate for use by the small farmers should have high priority. The shortage of trained manpower is perhaps the most serious obstacle to large-scale rural development efforts. An intensified training efforts particularly, directed towards the needs of local levels institutions and calling for greater efforts on training in the local environments where people work must also be pursued. The establishment of effective group organisation, such as farmers' association and cooperatives, should have high priority. Raising the output and incomes of the majority of the rural people means that they should have access to suitable technology and to the capital required to utilise that technology.

There are opportunities for considerably expanding employment in agriculture for both farmers and landless labourers, particularly by increasing cropping intensities on irrigated lands. But agriculture cannot absorb at ever increasing levels of productivity all of the prospective additions to the working age population. The promotion of rural industries in this context of rural development merits special attention. In many parts of the country, existing village crafts are disappearing rapidly, while modernisation of agriculture creates a demand for new inputs and consumer goods which could often be produced locally. If these two trends can be combined through relevant planning and support measures, the outcome would be a modernised local industrial structure geared to serving the rural areas and with linkage to national industry as well. Such rural industry could provide employment, increase incomes, slow rural-urban migration, increase the supply of goods and services to further rural and regional development.

Development of rural industries, however, required a nationally supported programme to provide inputs, like credit, raw materials and equipment, electricity, training for technical and managerial skills and efforts for research development and engineering. Provision of such a package can be in principle, facilitated by linking efforts with a rural development programme. Indeed, the general lack of rural development planning cannot be more clearly illustrated than by the weakness of current efforts to promote rural industry.

Recruitment must be localised to strengthen the links between development services and the community. Training exercises for agricultural extension agents, health workers and cooperative staff must be relevant to the actual needs and priorities of particular local situations. More consideration should be given to the possibility of training community opinion leaders such as primary school teachers, religious leader and village cooperative secretaries as agents of change. The minimum package approach may be introduced. The great advantages of minimum package approaches are the promise of low cost, extensive coverage with comparatively simple objectives and operating procedures. Ideally, the planning and implementation of rural development programmes involve adequate regional planning, strong central coordination, effective local level organisation and the participation of the rural people in the planning and implementation process.

A strong commitment to rural development policies at the national level is required if the impact on the problems of rural poverty is to be effective and broad-based.

It is important for rural development that the overall relationship between input and output prices within agriculture and the terms of trade between agriculture and other sectors of the economy, should be such as to stimulate growth in the rural areas. The analysis indicate that too often Government policies discriminate against development, particularly, agricultural production in the rural areas.

A properly constructed tax on agricultural land is probably most desirable to mobilise resources for public purposes since it can function without destroying incentives related to agricultural ouput.

Land reforms have obvious implications for the rural poor, since their subsistence depends for the most part on the extent of their control over land and the output from that land. Land reform should be viewed in the context of the multiple objectives of rural development.

Effective rural development planning should be given high priority. Steps to improve planning capacity should include establishing a small but expert unit charged with the development of a national programme of action. Such a body should provide leadership and should have a coordinating role in project identification, preparation and in monitoring ongoing programme. □

BOOKS

Analysis of Trade Policies

Trade Policies of India—A Quantiative Analysis. Dr. V. R. Panchmukhi, Concept Publishing Co., Delhi. pages 317, *price Rs.* 70.

"TRADE and not aid", develops the developing countries. Trade is, therefore, the backbone of the economy and the policies to regulate and control the same, deserves the utmost attention of the policy makers.

Dr. Panchmukhi is very right when he says that a systematic analysis of the effect of trade policies on the growth process of the economy and the preblem of choosing optimum trade policies have not received adequate attention both at the hands of the policy makers and trade theorists. He has made a very interesting and educative analysis of the import licensing system in India. His conclusions regarding the role of technology in influencing the pattern of trade have bared a number of important issues which need detailed and careful study. The concept of technological distance between exporting firms and non-exporting firms is an important contribution to the economic field. The question of identifying the various elements in the trade policies and measuring them for quantitative analysis has received a detailed attention of the author in the study. By using import flow matrix, the study has tried to provide a new dimension to the factor proportion theory of trade by defining a new concept of trade policy content of the trade flows.

An interesting issue has been raised in regard to the possible conflict between export promotion and income redistribution objectives on the relationship between elasticity of substitution between labour and capital in the exporting firms and the export performance indices.

Dr. Panchmukhi has emphasised the importance of trade policies as a determinant of trade pattern and has raised a number of significant issues in regard to the problem of quantitative measurement of policies and their effectiveness. One of the handicaps of the theoretical literature in Economics is its irrelevance to the situation prevailing in the developing economies. Trade strategy as part of the overall plan strategy is very important and has to be consistent with the overall objectives of the planning process. Hence, in the analysis of trade structure two related important aspects need to be analysed in a comprehensive manner. The first aspect is regarding the trade policy system in the country and the second is the relationship between the trade strategy and the plan objectives. Moreover, domestic trade policies have also to be consistent with international environment.

The study gives a very detailed and clear description of the trade policy system in India during the period 1950-74. Many related issues, such as measurement of trade policies and their effect on the various entities in the economy, etc. have been explained and discussed in various chapters of the study. Dr. Panchmukhi has emphatically suggested that one should always distinguish between the trade strategy and the trade policy syttem, actual policies depend upon the board trade strategy adopted. Obviously, the typology of trade strategies depends upon the broad strategy of development adopted by the planners. If the broad development strategy is one of giving relatively greater emphasis on development of industry rather than that of development of agriculture, then the trade strategy has to be suitably adopted to this development strategy.

The author's experiance in the Trade Development Authority and his effective contacts with the issues of the New International Economic Order have contributed much to the analytical presentation of the stimulating ideas. One finds that chapters I & II of the study, while discussing the many existing theories on determination of trade behaviour and providing a bird's eye view of the trade performance of the Indian economy, emphasize the urgent need to develop a unified trade theory relevant to the institutional framework of the developing countries. The conclusions derived in chapters VIII and IX regarding the role of technology in influencing the pattern of trade throw up a number of interesting issues which deserve a detailed and careful study.

Dr. Panchmukhi seems to have a very intricate knowledge of the trade system in the country and has come out with a very useful study, with important and relative strategies relating to the country's economic development. These should form an essential reading not only for students of economics but also for the planners and other policy makers to mould the overall economic policies regarding the development strategies of the country.

B. R. Kharbanda

Society and Prisons in India

Prison as a social system. .*with special reference to Maharashtra State by Mr. R. N. Datir, Popular Prakashan, Bombay,* 1978, *Pages XV*—438, *Price Rs.* 120.

PRISON diaries and several personal accounts replete with subjective reactions have not been lacking in India in recent years. However, these do not grapple with the objective realities of the organisation or suggest viable remedies. A historical and structural study of the prisons in India, such as the present work, has several merits. First of all, it has been authored by a person who, as Vice-Principal of the Borstal School at Kolhapur, has intimate knowledge of the subject. It is evocative of urgent reform in the sense that it is a dark area where light cannot easily enter either the minds or the massive walls and dingy cells.

Secondly, the author has dealt with aspects such as the organisation of the modern prison system, classification of prisons, discipline, labour, education and hygiene rather comprehensively. Considerations of such vital issues as open prisons and aid to released prisoners have been dealt with a humane touch and yet not unrelieved by professional knowledge and experience. However, the only limitation is that the book is entirely based on the experience of the progressive Maharashtra State and does not therefore, give an all-India coverage.

The author's treatment of the history of prisons in pre-British India is rather sketchy obviously due to

paucity of material and mainly because of the fact that there were no prisons in the modern sense. Imprisonment became the most common mode of punishment with the introduction of the Indian Penal Code, Civil and Criminal Procedure Codes. Imprisonment as deterrant punishment is being replaced by the current ideas of reform and rehabilitation.

Chapter II on comparison between civil and prison society followed by Chapter III on the objectives of prison supplies the core of the sociological reasoning which has been justly euologised by Professor A. R. Desai of Bombay University in his *Foreward* as "a pioneering venture". The author has not sought to cover up many of the deprivations within the prisons and the compensator ystrivings by the prisoners themselves to normalise their prison life. The normative principles underlying the prison system as framed by the former British rulers within a stupendous legal framework remains to a large extent unquestioned except in some rare casse of humanistic outpourings within the country. The author's treatment of transportation for life to Andamans is both valuable and informative in equal measure as the systematic account given of the modern prison system.

The interplay of socio-legal theory and administrative development being only in an incipient stage in India the present structural analysis by the author offers great scope in the direction of developing new lines of research on the basis of the study of comparative systems of prison organisation elsewhere and their management. The perspectives based on the experience of large federal political systems of the U.S.A., U.S.S.R. and the countries of the commonwealth should stimulate further studies in this field which has attracted only a limited number of scholars all over the world.

The obsession with theories and policies of economic control has palpably led to the overlooking of certain fundamental premises of law making and enforcement by the State as the primary instrument of social control. In the absence of a deeper conceptual basis for the restructuring of the State itself posited on humanistic considerations Indian sociological thought has not evidently raised any thoritical issues about the prison *as* a subsystem in relation to specific larger class society. However, the present study may be deemed to have paved the way for such efforts.

The need for translation of this valuable book into Hindi and other leading languages of India is unmistakable so as to reach a larger strata of the literate public. The book has been produced exceptionally well but call for a cheaper edition.

B. N. Nair

Matrimonial

Marriages in India *by Dr. V. N. K. Reddy, Academic Press, Pages* 132, *Price* Rs. 50

WHATEVER the sociologists may say about marriages in India an average Indian girl still turns pink and blushes to the tip of her fingers at the mention of marriage and once she has had a peep at her financee, may be as the result of advertisements in newspapers, he becomes the centre of all her dreams, thoughts and hights of fancy, which have no limit for a maiden.

But perhaps this language is Greek and Lation to a social scientist for whom truths of utility, calculation and computarisation take precedence over those of emotion. The book under review-a psycho-sociological study of matrimonial alliances through advertisements suffers from the basic defect that is based upon random samples. One hundred matrimonial advertisements have been selected from The Hindu and the Times of India representing the needs of the south and the north. With this limited figure as the base it is not possible to arrive at any accepted generalisations and conclusions. The auther rightly accepts this shortcoming.

While discussing the concept of marriage in India he is at sea and finds it "very difficult to describe, much less define, the nature and evolution of the concept." One may not readily agree with the author based as his conclusions are on such a limited plane, that the post independence period has witnessed many changes in the terms of matrimony or the generalisations among others that "the Age of Caste co-relation is governed by the chronolhgical factors but that the Age of Education co-relation is dominated by class consciousness reasons". We should not forget that tradition is a living phenomenon and old customs and traditions continue functionally in the day today rituals, even though in token from at times. While a couple may go in for a court marriage, under pressure and keeping with the times, the same is not considered complete untill it is performed in accordance with ritual.

In spite of modernity horoscope, caste, gotra, social status, economic viability of the bride groom and common culture and traditions continue to be given due weightage in matrimonial negotitions. Inter-provincial marriages are still rare. It is seldom that within the 20—25 years age group a girl is given away on terms of 'No bars'. This is commonly observed by elderly people over 40—50 years of age, for whom companion ship is the aim. Marriage is not expediency and unless forced the elders still ensure that the couple start off well, properly matched and provided for at least with a presentable dowry besides a fair and beautiful bride.

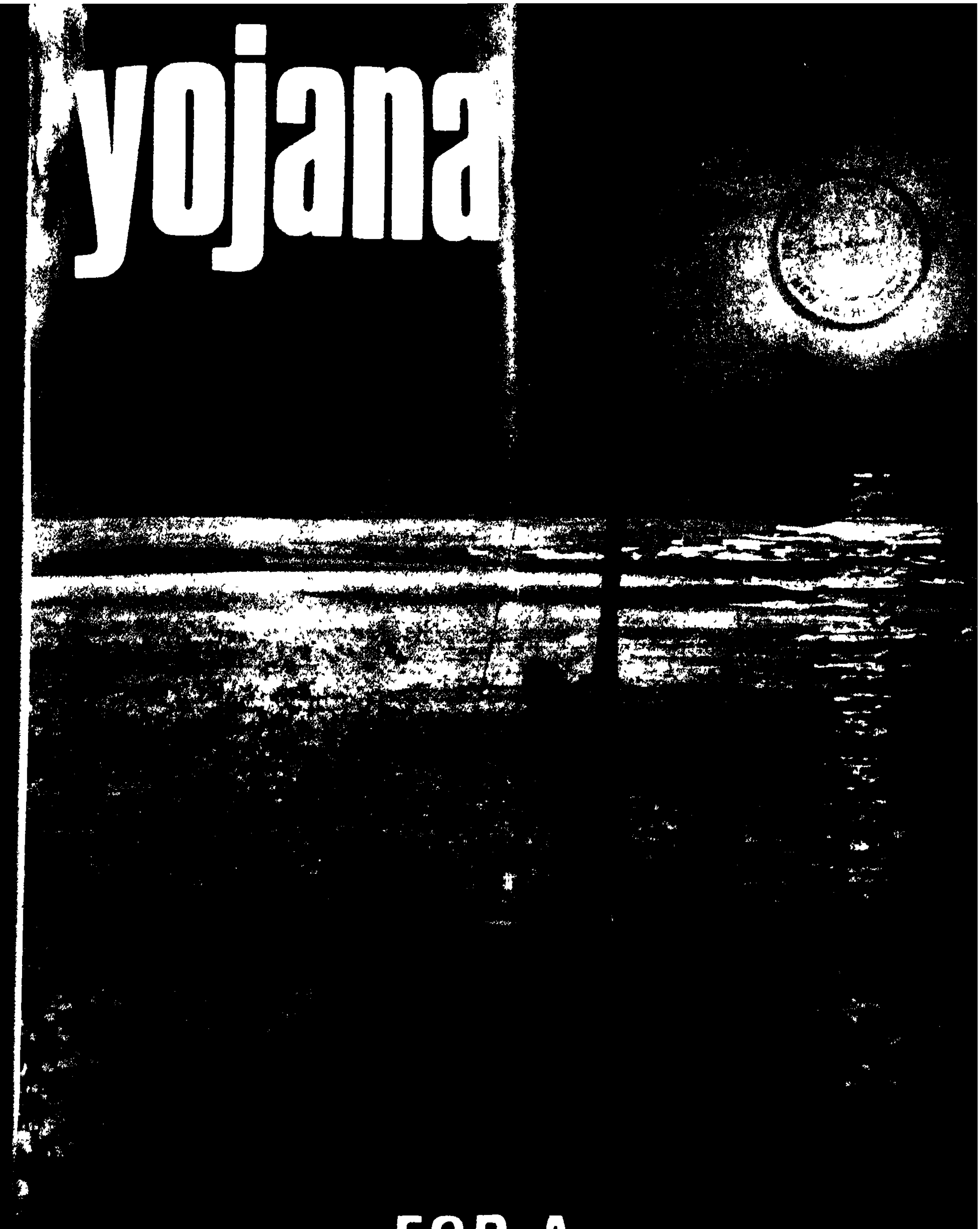
This fine study is a starting point for further research into an important field.

Gautam Sharma

Regd. No. D(D)-152

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and
Published by the Director, Publications Division, Patiala House, New Delhi-110001

yojana



FOR A
BRIGHTER TOMORROW

ASSAULT ON POVERTY



Our national poverty can only be removed by the coordination of our material resources through the cooperation of our individual powers. And the basis of our institution should be laid upon the economic co-operation. It must not only instruct, but live; not only think, but produce. Our centre of culture should not only be the centre of intellectual life in India, but the centre of her economic life also.

Rabindranath Tagore

YOJANA

Volume XXIII Numbers 14 & 15

15 August 1979

24 Sarvana 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001 Telegraphic Address: Yojana, New Delhi Telephones: 383655, 387910, 385481 (extensions 402 and 373) Circulation: Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription: Annual —Rs. 18. Two Years- Rs 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Year—£6.30 or $ 12.50 Single Copy—0 12 or $ 0 25

IN THIS ISSUE

Editorial

The Poor Majority

LIKE a malignant disease poverty is on a steady march to hold in its grip the majority of the Indian people who fondly hoped that the worst features of poverty and exploitation would cease after the attainment of independence. Few could think that the Indian rule would be so un-Indian as to unfold the sad spectacle of more than 42 per cent of the population going below the poverty line to eke out a miserable existence in the course of the last 32 years. For the poor there is not even the glimmer of a false dawn.

It is sad to reflect that the enlightened policy of economic development has failed to arrest the growth of poverty. The situation has indeed worsened. Only population and price level show remarkable capacity for growth. The most visible burst of consumer spending is by a rich few while the substantial majority in India can only look for more poverty. The incremental benefits of growth have gone to the affluent who also command the resources to grab the gains of the green revolution. The financial assistance rendered by public institutions have favoured the large industrial houses in the private sector. The products of the public sector undertakings have helped the private sector to grow whose quantitative expansion appears to be directly related to the size of the former. Critics allege that one of the important functions of the public sector is to provide the private sector such goods and services which the latter do not like to produce themselves because of heavy investment and high risks. Land reforms, which were intended to change the ownership and control over land, have failed to change the structure of the economy in any substantial measure. The old feudal system has been abolished only to bring millions of tenants into direct contact with the State. But the legislative measure is more in the nature of revenue adminisration. The former intermediaries continue to keep land under their effective control in many States. The ceiling legislation has sufficient liberal and legal loopholes. The Draft Five-Year Plan 1978—83 frankly admits that by the end of July 1977, the estimated surplus area was only 5.32 million acres, the area 'declared surplus' was 4.04 million acres, the area 'taken over' by governments was 2.10 million acres, and the area actually distributed was only 1·29 million acres. The distributed area is thus less than one fourth of the estimated surplus which is again a fraction of the potential surplus of about 30 million acres.

India has certainly grown economically in the decades of planning even though the rate of growth is slow. But the gains have failed to reach the weaker sections of the society. The growth of GNP has not made any impact on malnutrition, disease, illiteracy and squalid housing. The operation of economic system has resulted in concentration of wealth and means of production in the hands of a few to the detriment of the community.

Even policies specifically meant to reach the rural poor and the weaker sections of the society reveal a sordid tale. Cooperatives, supposed to unite the weak against the exploiters in entrenched positions, have fallen into the hands of dominant village families who exercise their influence and authority over the mass of small holders and labourers. A study conducted by the Reserve Bank of India into the working of the Small Farmers Development Agency (SFDA) showed that the small farmers were kept out of it. In real life-drama we are having not one Hamlet without the Prince of Denmark but several. In fact, organised exploitation of the weaker sections are being carried out by the very agencies which have been set up to protect their interests.

In this frustrating situation, what do we do? Shall we conclude that there is an inherent defect in our economic structure which makes it almost impossible to banish poverty or exploitation ? Undoubtedly, quest for wealth has aroused the worst instincts of man in our society and a spirit of acquisition is pervading all spheres of life.

Even so, the battle is not lost, the attack has only begun. If the poor men's welfare have become the first concern for political leaders and planners, it is only because the poor are growing in number and becoming more and more articulate in voicing their demands. The rural and urban poor should be properly organised and take a leading part in the assault to ensure the success of the programmes for reduction and elimination of their poverty. Price in some form or other has to be paid by the potential beneficiaries to bring about the intended effect of the various laws, policies and schemes designed to benefit them. To build from below will remain an empty shibboleth unless those whom Tagore described as "lowliest and low" come forward to build their own destiny. Independence has been achieved but it is still a question mark when we shall realise the Gandhian ideal of Poorna Swaraj where "the poorest shall feel that it is their country, in whose making they have an effective voice, in which there will be no high class or low class of people"

All For the Common Man

India is now almost at the final stage of approving the Sixth Five Year Plan, which means the near completion of a chapter in our march towards progress and economic self-sufficiency. It is also the beginning of yet another such programme. In a developing country planning is bound to be a long-term process extended over a number of years, and often planning has to visualise twenty to twenty-five years at a time.

India has gained experience of about 28 years of planning. In fact this is a glorious chapter of the nations struggle for economic emancipation. Every target reached is a mile-stone leading to another bigger and better target ahead.

Whatever success India has achieved under the Planned programme, at the base there is initiative and hard work of the people. The common man of this country has given the proof that he is determined to work for the country's prosperity.

But how much an individual has gained out of this ? Ultimately it is he who decides the destiny of the country. He is not interested with tables showing allotment of funds for this or that or in cold statistics. He will not be satisfied if he is just informed that our national income has gone up or we are today earning more foreign exchange than before. He wants to see himself well placed in the order of things.

Our government seeks specially to improve the level of living of all the people in 5,58,000 villages in India, as such in all our plans this common man has to find a place which is long over due.


DIPT IN
FAR S HUMA SEE,
SAW HE VIS RLD
AND L THE WOU
—Tenn

Antyodaya

The Programme in which the poor family is identified as a concrete human reality

Prof. Raj Krishna,
Member, Planning Commission

THERE are four features of the Antyodaya approach to rural development which deserve special emphasis.

First, under this approach poverty does not remain a statistical abstraction. The poor family is identified as a concrete human reality.

Second, emphasis is given to the delivery of productive assets so that the poor family begins to get regular income from self-employment.

Third, the administration goes out, identifies and assists the poor people, instead of waiting for people to come for assistance.

Fourth, the criterion of identification is strictly economic (income below the poverty-line which has been defined as about Rs. 3600 per family per year in Rajasthan.).

All these features are obviously commendable and represent important departures from past practice.

Although the implementation of the scheme has thrown up many problems which will have to be solved, it is creditable that some concrete assistance did reach about 124,000 very poor families by the middle of September 1978. About 73 per cent of this number had been allotted productive assets (land or loans for other means of production). Only 20 per cent families, with destitutes unable to work, have been given cash pensions. And only 4 per cent have been given wage employment in government public works. forestry and mining on a priority basis.

In some places poor families were wrongly identified due to local mischief and the names of many wrongly identified families have had to be deleted from the list of beneficiaries. Thus about 5000 families have been deleted from the list of 160,000 originally identified. But, by and large, a sincere effort has been made to get the poorest families identfied by the village communities themselves.

Sheep units are for extra income



In the field of village and small industries, a significant development took place last year. District Industries Centres are being set up by the Government throughout the country to deal with all requirements of this sector at the district level itself. The requisite facilities at pre-investment, investment and post-investment stages in the form of information about the economic potentialities of the district, raw materials and other resources, supply of machinery and equipment, arrangements for credit and marketing are now available to the village and small enterpreneurs nearer to their home and under a single roof of DICs. This easy access to the necessary guidance and support required by entrepreneurs will go a long way to boost up the promotion of village and small scale industries sector which is an important component of the IRD programme.

Initiation of the various rural development programmes discussed above indicate that steps have been taken in the right direction to tackle massive problem of poverty within a period o[f] years. To supplement governmental efforts, operation of non-official bodies like voluntary a[gen]cies engaged in social and rural development [w]and professional institutions is also proposed t[o be] sought by associating them in the formulation and [im]plementation of the block level plans under Integrated Rural Development programme. The [in]dustrial and business houses would also be invo[lved] as many of them have evinced interest in the wor[k of] rural development during recent years. The succe[ss of] the programme will depend on the efficiency [and] dedication with which the concerned governmental [and] non-governmental agencies implement it. Contin[uous] and vigilant watch by way of concurrent monit[oring] and evaluation is an absolute necessity. Given [this,] we can fervently hope that soon the country wi[ll come] out of the clutches of poverty and a new era of [pro]gress and prosperity will set in □

POVERTY AND CHILD DEVELOPMENT



Retrospect & Prospects

Saran Singh

Secretary, Social Welfare Department, Govt. of India

The Asian scene in the decade of Seventies has witnessed many major changes. India advanced to become the tenth most industrially developed country in the world, South Korea registered phenomenal double-digit rate of growth. China made great strides in social development. Burma and Sri Lanka dramatically reduced their infant mortality. India consolidated its Green Revolution and reaped steadily rising harvests. But as we celebrate the 32nd anniversary of India's freedom and, poised as we are more than half way through the International Year of the Child on the threshold of the new decade of Eighties, it is appropriate that we have a closer look at the status of the child in the situation of poverty.

There are many definitions of poverty as a concept of relative deprivation; various scales have been devised to measure the degree of poverty in different situations and regions. Nevertheless, the enormity of the problem is all too evident in the context of a population of which full 42 per cent are children of 14 years or under, in contrast to 25 per cent in developed countries. The population is growing at an average of 2.3 per cent per year, which means that in the 1980s the strains on the limited resources available for social development, particularly health and education, would be almost unbearable!

Doing Better, Feeling Worse

Every major endeavour in social change and social development in India brings us in confrontation with the magnitude of the problem. Nowhere is this more evident than in the situation of the child. Much effort, in terms of men and money, has been put in action, Since independence, through developmental planning for the welfare and development of children. The planners and programmers in the field claim remarkable achievements, while the press, the public and social scientists refute the claim. An objective assessment of the progress yields the sobering thought that, despite the recent rapid strides in the development of child welfare, much remains to be done in view of the vast number of children and pervasive poverty in the country. It is precisely this realisation that compels a re-examination of our basic policies and programmes for children.

Viewed retrospectively, from year to year, during the past two decades, the indicators definitely reveal a progressive trend The data presented in the following paragraphs are divided into three parts— (a) Demography, (b) Plan Investment, and (c) Programmes.

Plan Investment

As the frontiers of planned development expand, there is an inevitable impact on child services. But the priority given to industrial investment and to capital intensive project which have tended to concentrate investment in urban centres has far outstripped the provisions made for direct child development programmes It is doubtless difficult to set aside a certain amount of plan provision for child welfare *der se.* for the programmes of child welfare cut across several

Table 1. Child Population in India (0—14) years during 1961 to 1981

(Figures in 000's)

Age-group	1961	Percentage	1966	Percentage	1971	Percentage	1976	Percentage	1981	Percentage
0—4	72,604	40.3	78,893	43 0	84,351	37.5	86,951	36.3	80,295	33.2
5—9	58,065	32 1	67,655	36 9	74,161	32 9	79,680	33.2	82,907	34.2
10-14	49,762	27 5	36,708	20 1	66,451	29 6	72,839	30 5	98,582	32.6
Total (Child population)	180,431	100 0	183,256	100 0	224,963	100 0	239,470	100 0	241,784	100.0
All India	439,073	(41 0)	489,070	(37 4)	546,372	(41 1)	605,000	(39.5)	657,329	(36 7)

Note : Figures in brackets indicate percentage of child population to the total population.

inter-related developmental sectors like health, nutrition, education, water supply and rural development earmarking is also not possible even within the social welfare sector as most of the social welfare programmes have a content of child welfare within them. These limitations notwithstanding, let us consider the provisions for child welfare under various sectors of development in various Five Year Plan

A gradual increase in the provisions from Plan to Plan under various sectors, which are directly or indirectly responsible for child welfare, strengthens the argument to prove the increasing concern of the State towards the welfare and development of children. In absolute terms, in most of the sectors, provisions have been increased by ten folds from first plan to sixth plan

Table 2. Plan Provision related to Child Welfare during First to Sixth Five Year Plans (1951-61 to 1978 83)

(Rs. in crore)

Plan period	Health	Education (Elementary)	Nutrition	Social Welfare	Backward Classes	Family Welfare
I. Plan (1951—56)	137 00	85 00		4 00	32 00	1.00
II Plan (1956—61)	269 00	95 00	*	19.00	90.00	5 00
III. Plan (1961—66)	315.00	178 00		31 26	114.20	27.00
IV. Plan (1969—74)	434 00	235 00	*	92 94	142 38	315.00
V Plan (1974—78)	681 00	410 00	115 68	86 13	516.98	497 36
VI Plan (1979—83) (Provisional)	1330 00	900 00	174 50	130 50	895.00	765 00

*Nutrition programmes were covered under Education, Social Welfare Health etc

Note : 1 Under Health, the claim for child welfare would be to the extent of 50 per cent of total outlays as children are benefited under all the programmes of Health

2 Under Social Welfare, about 75 per cent of the plan provisions could be claimed for child welfare as the highest priority was given to child welfare

3 Under Backward classes welfare about 25 per cent of plan provisions could be taken for children as the educational programmes for backward classes children viz Pre-matric Scholarships, Hostels, Special Schools, Ashram Schools, Financial assistance for students etc claim about 25 per cent.

4 Under Family Welfare, only 5—10 per cent claim is for children as there is only one programme viz. Maternity and Child Health Services under this ; head

Source: 1. Women in India—A Statistical Profile—p 321.

2. Plan Documents—First to Sixth Five Year Plan.

Realising the fact that investment in the field of child welfare is an important step in building up human resource, the Government of India had been according high priority for child welfare in its developmental programmes. Data given in the following table presents a comparative picture of the programme-wise plan provisions in the social welfare sector which is responsible for child welfare.

There is a decline in the provision for Child Welfare in the Fifth and Sixth Plan provisions when compared to provisions in the Fourth Plan. This is explained by the fact that schemes holding a total provision of Rs. 5776.38 lakh (76.3 per cent of total provision for child welfare in the IV Plan) had been transferred to the State Sectors.

The following table presents various plan grammes and provisions of child welfare durin Fourth and Fifth Five Year Plans under social fare sector. These programmes are indicative quote the exclusive provisions made for child we in addition to the programmes mentioned below, are other programmes of social welfare, like h capped welfare, women welfare, assistance to v tary agenceis, and research where children too d benefit directly or indirectly.

Here again, reasons for reduction in the total vision of child welfare are due to the transfer of tain programmes from the Central to the State S during the Fifth Five Year Plan. If an assessme made after excluding the provisions under these

Programme-wise expenditure under Social Welfare Sector during the Fourth, Fifth and Sixth Five Year Plans

(Rs. in lal

Programme	Fourth Plan (1969—74)		Fifth Plan (1974—78)		Sixth Plan (78—83)	
	Provision	% age	Provision	% age	Provision	% a
(1)	(2)	(3)	(4)	(5)	(6)	(7
1. Child Welfare	6627.38	87.7	2935.64	46.3	5450.00	4
2. Women Welfare	20 00	0 2	1565.39	24 8	2614 00	20
3. Welfare of the Handicapped	130 96	1 8	749.01	11 8	1723.00	1
4. Social Defence	13 95	0.1	44 50	0 8	*	
5. Grant-in-aid	675.23	8.9	1004.95	15 3	1850 00	1
6. Research, Training Administration	18 50	0.2	53.33	0 9	429 00	
7. Others	76.00	1 1	.	.	984.00	
Total	7562.02	100.0	6352.82	100 0	13050 00	10

Provisions for Child Welfare under Social Welfare Sector during Fourth and Fifth Five Year Plans (1969—74 and 1974—79)

(*Rs. in lak*

Scheme	Fourth Plan (1969—74)		Fifth Plan (1974— 7	
	Provisions	Expenditure	Provision	Expendit
(1)	(2)	(3)	(4)	(5)
1. Family & Child Welfare Projects : *	748.00	681 98	240.20*	220
2. Assistance for the Welfare of destitute children	50.00	..	.	
3. Nutrition feeding through Balwadis	397.00	328 95	Transferred to State Sector	
4. Special Nutrition Programmes	5153 42	4295.86	669.06	669
5. NIPCCD	16.50	15.53	64.95	58
6. Training Programmes	36.50	28 43	271.26	154
7. Pre-vocational Training Centres	225.96	194 00	Transferred to State Sector	
8. Creches for children of working/ailing mothers *	..	..	109.29	104
9. Children Homes	..	.	800.00	599
10. I.C.D.S.	..	..	739.99	291
11. Integrated Education		..	40.89	30
Total	**6627 38**	**5594.75**	**2935.64**	**2128**

·ogrammes which had been transferred to State ector, allocation of funds for child welfare shows a rogressive trend from Rs. 851.00 lakh in the Fourth lan to Rs. 2035.64 lakh in the Fifth Plan and › Rs. 5450.00 lakh in the medium term Plan, 978—83.

Programmes

Health—The three important indicators to project ie progress of health services are—fall in death rate, irth rate and infant mortality rate besides these, the apid expansion and improvement of health infra-tructure (Primary Health Centres, Hospitals, Clinics, tc.) is another indicator to substantiate the progress of the implementation of various health services.

The following table indicates a gradual fall in the leath and birth rates over a period of 70 years :

(Number per 1000)

Period	Crude death rate	Crude birth rate
(1)	(2)	(3)
1901—11	42.6	49.2
1911—21	47.2	48.1
1921—31	36.3	46.4
1931—41	31.2	45.2
1941—51	27.4	39.9
1951—61	22.8	41 7
1961—71	14.9	36 9
1971-72	16 9	36.6
1972-73	15.5	34.6
1973-74	14.4	34 5

The decreasing trend in the death rate from 42 6 o 14.4 per 1000 in a period of 70 years is a clear vidence of a significant improvement in the health and medical facilities. Similarly, the gradual decline n the birth rate from 49.2 per thousand in 1901—11 o 34.5 per thousand in 1973-74 is due to the effec-ive implementation of various family welfare pro-grammes. However, both the death and birth rates have a direct bearing on the health and welfare status of children.

A gradual fall in the rate of infant mortality is another indicative to prove the effect of health pro-grames for children. The following data on the sub-ect shows a steady decline in the rate of infant morta-lity over a period of 60 years :

Infant Mortality rates for registration areas in India from 1911—71

Period	Infant Mortality rate
(1)	(2)
1911—1915	204 (5 year age)
1916—1920	219 (5 year age)
1921—1925	179 (5 year age)
1926—1930	178 (5 year age)
1931—1935	174 (5 year age)
1935—1940	161 (5 year age)
1941—1945	161 (5 year age)
1946—1950	134 (5 year age)
1951—1961	146 (5 year age)
1963	146
1968	137
1969	140
1971	122

The special relevance to the decline in the death rate was the downward trend of infant mortality from the level of 204 per thousand live births in 1911—1915 to 122 in 1971.

There is a remarkable improvement in the expect-ancy of life at birth which was doubled during a period of 70 years Improvement in the standards of health in general and of the expectant mothers in particular has a relevance to this achievement.

Improvement and expansion of health infrastructure during the last 25 years could be claimed through the increase in the number of Primary Health Centres which are the focal points for the delivery of health services in rural areas. The table (next page) gives an idea about the expansion in the field :

In addition to these 5000 P H.Cs, there are about 4000 hospitals with a capacity of 3.50 lakh beds in the country by 1974. A recent achievement for the welfare of children is—all the district level hospitals except 58 hospitals are now attached with children's wards or Paediatric units.

The maternal and child health services in the country have also taken new dimensions in their ex-pansion through implementation of various types of immunization programmes.

Establishment of Primary Health Centres and Sub-Centres in India during First to Fifth Five Year Plan

Period	No. of P.H Cs	
	Main Centres	Sub-Centres
(1)	(2)	(3)
First Plan (1951—56) . .	67	..
Second Plan (1955—61) .	2565	..
Third Plan (1961—66) .	4631	..
Inter Plan (1966—69)	4919	22826
Fourth Plan (1969—74) .	5283	33509
Fifth Plan (1974—79) . .	5400	38115

The most important programmes for children under Education sector is the Universal Primary Education. The progress under this programme is being assessed on the basis of the rate of enrolment of children in the Primary and Middle schools.

Nutrition

At present the following nutrition programm children and mothers are as shown in table next

The other major programmes are of Special tion under which children below 6 years mothers, both expectant and nursing, are bene Achievement under this scheme are in the table page.

The two programmes of Special Nut and Balwadi Nutrition which are exclusively n for pre-school age children and expectant and nu mothers have made a steady progress during IV and maintained the same level of total coverage 39.27 lakh children and mothers in the tribal a urban slums and backward rural areas

Enrolment rate in the age group 6—14 years in primary and middle schools in India from 1950-51 to 1973-74

Year	Enrolment as percentage of population in the age-group					
	6—11 years (Class I—V)			11—14 years (VI—VIII)		
	Boys	Girls	Total	Boys	Girls	Tot
(1)	(2)	(3)	(4)	(5)	(5)	
1950-51	59.8	24.6	42.6	20.7	4 5	1
1955-56	70 3	32.4	52.9	25 5	6 9	1
1960-61	82 6	41 4	62 4	33 2	11.3	2
1965-66	96.3	56.5	76 7	44.2	17.0	3
1968-69 . .	93 0	57.0	75 8	45.0	18.0	3
1973-74 . . . . . . (Provisional)	100 1	65.6	83 5	48 4	22.2	3
1978-79 . . . . (Target)	111 3	81.9	97.1	60.4	32.8	4

The data presented in the above table bear testimony to the increasing rate of school enrolment, although the rate amongst girls lags way behind as compared to the rate among boys.

Despite a high rate of 60 per cent drop-outs, the progressive increase in the number of child literates (in the age groups 5—9 years and 10—14 years) has been quite encouraging as the number of literates had multiplied by fifeen times in the age-group 5—9 years and by four times in the age-group 10—14 years during a period of 20 years.

Integrated Development

The programme of Integrated Child De lopment Service (ICDS), now covering blocks in the country, provide a pack of health nutrition and pre-school educat al services to children below six years, pectant and nursing mothers. The programme wl made a modest beginning in late 1975 has had a found impact on the status of preschool children the areas covered, spotlighting the anganwadi as focal point in the village for mother and child and demonstrating the success of the local wor invariably a woman, as an agent of change, acc able to the community.

Scheme	Department Incharge	Remarks
Feeding Programmes		
1. Mid-day Meals	I ducation	I oi School going children (5—16 years)
2. Special Nutrition Programmes	Social Welfare	For pre-school children, expectant and nursing mothers.
3. Balwadi Nutrition Programmes		SNP transferred to State sector as part of Minimum Need Programme since Fifth Plan.
Demonstration-cum-Education Programmes		
4. Applied Nutrition Programme'	Rural Development	—
5 Composite progiammes for Women & Childien	-do-	—
I. Production-cum-Supply Programmes		
6 Production/processing of Fortified Foods	Food	
7. Supply of Folic Acid and Vitamin 'A'	Health	I or expectant and nursing mothers.

Table 10 -Achievements under Special Nutrition Porgrammes

Year	Financial Tragets		Physical Targets	
	Provision	Expenditure	Centres	Beneficiaries (in lakhs)
	(Rs. in lakhs)			
(1)			(2)	(3)
70-71	400.00	129.76	6607	6.54
71-72	1000.00	870.73	17579	21.38
72-73	2000 00	1721.57	21214	35.00
73-74	1753 42	1573.80	28117	36.98
74-75				
75-76				
76-77	Tiansferred to State Sector as part of the Minimum Needs programme and the same coverage continued during the Vth Plan also			
77-78				
78-79				

The scheme of children in Need of Care and Proion was started in 1974-75 to provide institutional non-institutional services for orphaned/abandoned and destitute children.

he scheme of Creches for children of working and ıg mothers provides day care services for children he age-group 0—5 years which include sleeping lities, supplementary nutrition, immunisation, lth check-up etc. The financial and physical tai achieved under this scheme project a progiessive ansion of these services.

Social Defence

n almost all the States/Union Territories, Children's s are under implementation to protect and safeguard the interests of those children who come in conflict with law.

As part of the services under this Act, there are about 160 Remand-cum-Observation Homes with a capacity of 8000 children; about 100 Approved/certified/special schools with a capacity of 10,000 and 216 Children Homes with a capacity of 15,000 children.

In addition to the schemes mentioned above, there are many other welfare schemes for children like Balwadis/Day Care Centres, Play Centres, Children Homes, Child Guidance Clinics, Holiday Homes, Family and Child Welfare projects, which are being implemented by States/Union Territories, about which no complete data are readily available.

Coverage under the programme of creches for children of working/Ailing mothers

Year	Provision (Rs. in lakhs)	Coverage No. of creches	Number of children
1974-75 .	5,93	247	6175
1975-76 .	28.36	741	18525
1976-77 .	25.00	762	19050
1977-78 .	45.00	929	23225
1978-79 .	60 00	1170	30250

Prospects

Varied and impressive as the figures quoted earlier may be, it is impossible to be sanguine about some of the programmes and about the success in some States where plan provisions are precariously inadequate and priorities hopelessly askew, giving the child a backseat. But it seems to be a part of our culture that we gvie a backseat to women and children. But the time for critical choices has come. One such area affecting the child is nutrition

Malnutrition remains one of the most poignant problems affecting children in India. It is recognised that the foundations of man's physical and socio-psychological development are laid in early childhood. Biological and genetic researches have established that over 50 per cent of the human intelligence base is developed before the child's fifth birthday. During this period the child's needs are basically biological and emotional and can best be improved within the child's family environment. In consequence, the young child in situations of poverty suffers most as a consequence of poverty and ignorance.

Despite the decline in infant mortality registered in India over the last 60 years, it is still among the highest in the world, at 122 per thosuand in 1971, as compared to the rates of 10—25 per thousand live births in most of the developed countries. The age specific death rate for the age group 1—4 years is in the range of 32 per thousand as compared to about one per thousand in many developed countries. Malnutrition, in a mutually aggravating relationship with disease, is often quoted by experts as a major killer of small children in our country. Diarrhoea, respiratory infections and fevers are generally regarded as the main diseases connected with child mortality, and studies indicate the highest mortality among children in the lowest socio-economic groups. Nutritior veys also indicate a high incidence of calorie-p malnutrition, anaemia and vitamin A deficiency, ly among young children in rural and tribal are well as in city slums. Sixteen to twenty nine perc children (below 6 years) have a weight deficit percent or above, symptomatic of a severe calori often coupled with protein deficiency. Some 3 cent children suffer from acute clinical conditic caloric-protein malnutrition, manifested as Kwa kor and Marasmas. In its wider perspective, the blem is one of human wastage and providing the disposing condition for colossal biological dec the country's human resource.

Assuming that there is a high correlation be poverty and prolonged and serious malnu among children below 6 years, as also among n mothers, further assuming that 40 per cent (population lives in poverty, adversely affecting proper growth of children below 6 years, and r upon the population projections of the Re General's office, the picture that emerges of the population below 6, in need of supportive State vention, is, eloquently, told by the following figu

Year	Pop in '000'	40 Percen of Pop in '000' (poor section)	Chil below in '0 10 Pe (poor se
1978	634,193	253,677	4
1979 . .	646,779	259,712	4
1980 . .	659,387	263,755	5
1981 . .	672,014	268,806	5
1982 .	684,627	273,851	5
1983 . .	697,214	278,886	5

That this situation co-exists with a record st foodgrains is a paradox of perplexing proportion the matter of cereals and pulses, the per capi availability per day in 1965 was 480 gms; it down to 455 gms in 1970 and to 408.6 gms in The provisional figure for 1978 of 472.6 gms st mains lower than that of 1965.

Initiation of a massive programme of "Foo Work" was a major turning point, not only in ta the problems of unemployment and under-emplo but to ensure the availability of cereals to the

poor. A time has come when an equally hold and imaginative programme of "Food for Nutrition" for children below 6, as well as pregnant women and nursing mothers is introduced in acute poverty pockets. The success of Project 2206 in World Food Programme, benefiting eighteen lakh children in ten States, has demonstrated the efficacy of such an intervention More children in poverty pockets will have to be given supplements to the extent of 300 calories and 8 to 10 gms of protein, per child, per day. Pregnant women and nursing mothers need a supplementation of 500 to 600 calories and 18 to 20 gms of protein per day. The cost of these supplements comes to about 30 paise, per child, per day, and 50 paise per woman at the current rates. An early acceptance of this supplementation as a minimum need in 2000 blocks will give rich dividends in the 1980s and lay the foundation for a just social order.

Primary Health Care

In the health sector, an excellent start has been made on immunisation, launched during the International Year of the Child. Coming as it does in the wake of the Alma-Ata Declaration, it is the right strategy for health for the masses before the year 2000. It also marks a departure frome the self-perpetuating hospital-oriented system of medical intervention. Together with primary health care, immunisation is the appropriate answer to the criticism that the delivery of health services in the past had suffered from basic inequity and was weighted in favour of the classes rather than masses. A radical rearrangement, bringing health care to the door-step of the poor, is theobvious need of the new decade.

The average Indian in 1965 was able to meet 97.7 per cent of the caloric requirements; ten years later the satisfaction was only 85.6 per cent. The reasons are complex, but point towards uneven distribution of wealth and distinctions not only of class but also of rural-urban character. There are lessons to be learnt. On the Asian continent, China with 75 per cent of its youth served with primary health care and clean water, Vietnam has direct services for over two million children through day-care and pre-school centres. Given the will and determination, even with limited investment, the social development programmes of these countries have been able to tackle some of the most basic needs of the child. An example in India is in the area of maternity services. Most rural poor still rely on traditional birth attendants. Training and orientation of the village dai holds enormous potential in the reduction of infant mortality, provided it is integrated with immunization and primary health care. Closely connected with this is the need for non formal education. By preference in India and the consequential neglect of the young female child's health and nutrition has already made us pay heavy price in terms of infant mortality an dthe extraordinary imbalance of males nd females. This brings one face to face with the sombre fact that although overall life expectancy and natiolan nutrition averages may be rising, women and and children (especially girls) continue to be critically vulnerable and call for a double strategy : on which integrates women and children into the development process and the other which makes sure that their particular needs do not get ignored in the process. Looking closely, it is evident that the case of the under-nourished pregnant woman, the neglected female child and the girl dropout worker are only different aspects of the same problem. They result from the same social, cultural and economic bais against females, ingrained in the psyche of the Indian male.

Then what is to be done ? A small beginning in integrated child development (ICDS) programme has been made and the degree of success of ICDS package holds promise that convergence of the basic needs of the mother and child and with community participation can achieve significant change. This would obviously demand change in the investment priorities. Greater spending to strengthen health and social welfare programmes, primary health care, immunization, water supply, control of diarrhoeal diseases and nutrition can bring about a dramatic change. The key factor in the success of ICDS would seem to be the community participation, or more precisely, the women's participation, provided the basic services are brought together in one basket and delivered through a simple infrastructure. Until ICDS attains an optimum coverage, say, in 2000 blocks, in phased manner, increasing attention is needed to the strengthening of supplementary nutrition programmes with primary health care input and a special emphasis on children below three years in age group most difficult to reach. The aim of the child development programmes cannot be that Government relieve the family of this barden and assume direct responsibility, but to involve and assist the family in meeting the child's nutritional, health, education and psychological needs. Such an aim can be achieved by making integrated child development a mass programme, to which the Government and the people should be jointly committed through the 1980s. □

GOAN VILLAGE MARCHES TO SELF RELIANCE

- A FARMER MADE OWNER OF THE SOIL HE PLOUGHS AND THE HOUSE HE DWELLS
- RURAL INDEBTEDNESS STAYED
- 97% RURAL AREA ELECTRIFIED POWER FOR A HOUSE AND A FARM
- SCHOOLING-LITERACY RAISED TO 48% AND MEDICAL FACILITIES-POPULATION BED RATIO 1:1250
- HANDICRAFTS, AND HANDLOOMS REVIVED WITH FINANCIAL AND TECHNICAL INCENTIVE
- PANCHAYATS MADE STRONG AND EFFECTIVE CENT PER CENT INVOLVEMENT OF FARMERS I COOPERATIVES
- WELL SURFACED ROADS LINKING VILLAGE TO TOWN FOR FARMERS AND THEIR PRODUCT

GOA FORGES AHEAD

ISSUED BY

DIRECTOR OF INFORMATION
GOVT. OF GOA, DAMAN AND DIU
3RD FLOOR UDYOG BHAVAN
PANAJI-GOA

Assault on Poverty

L. C. Jain
Chairman, All India Handicrafts Board

MANY attempts have been made in the past three decades to assail poverty. But none has been as affective as the Antyodaya Programme launched first by the Rajasthan Government on 2nd October 1977 and subsequently adopted by several other States such as Uttar Pradesh, Bihar, Gujarat, Himachal Pradesh, Orissa, Assam, etc.

Antyodaya means uplift of the last man i.e. the poorest among the poor. Under the Antyodaya Programme the whole village community and Government machinery is mobilised to identify the poorest five house-holds in each village. Once the poorest house-holds have been identified, their own ideas and wishes with regard to economic activity which in their judgement would improve their income, are ascertained. Priority is then accorded in delivering financial and other assistance required to enable each of the Antyodaya family to implement its plan. Antyodaya thus confronts poverty in person and not in an abstract form.

Antyodaya Programme has already caught he imagination of the poor. Over one million families are likely to be benefitted under this programme by the end of the current year 1979-80. It can be expected that during the Sixth Plan an additional one million families will be benefitted annually under this programme.

The Planning Commission, which was initially sceptical about the Antyodaya Programme, has now shed its doubts after its Programme Evaluation Organisation made an independent study of the working of the Antyodaya in Rajasthan in the first year. The major findings of this evaluation study (though confined to Rajasthan) should be of wide interest to all those concerned with the eradication of poverty.

Features

There are four features of the Antyodaya approach to rural development which deserve special emphasis. *First*, under this approach poverty does not remain a statistical abstraction. The poor family is identified as a concrete human reality.

Second, emphasis is given to the delivery of productive assets so that the poor family begins to get regular income from self-employment.

Third, the administration goes out, identifies and assists the poor people, instead of waiting for people to come for assistance.

Fourth, the criterion of identification is strictly economic (inome below the poverty-line which has been defined as about Rs. 3,600 per family per year in Rajasthan)

All these features are obviously commendable and represent important departures from past practice.

Problems

Although the implementation of the scheme has thrown up many problems which will have to be solved, it is creditable that some concrete assistance did reach about 124,000 very poor families by the middle of September 1978. About 73 per cent of this number had been allotted productive assets (land or loans for other means of production). Only 20 per cent families, with destitutes unable to work, have been given cash pensions. And only 4 per cent have been given wage employment in governmnt public works forestry and mining on a priority basis.

In some places poor families were wrongly identified due to local mischief and the names of many wrongly identified families have had to be deleted from the list of beneficiaries. Thus about 5000 families have been deleted from the list of 160,000 originally identified. But, by and large, a sincere effort has been made to get the poorest families identified by the village communities themselves.

It is significant that under the scheme, credits amounting to Rs. 7.3 crore have been disbursed to about 36,000 families by cooperative and commercial banks by the end of January 1979. But the lag between sanction and disbursement is still substantial. At the end of January 1979, about 26,000 loans had been sanctioned but not disbursed. Therefore, urgent attention needs to be given to the task of speeding up disbursements.

Animal husbandry has been found to be the most attractive and remunerative activity for antyodaya beneficiaries. This explains the fact that about 3.7 per cent of credits up to 1st September 1978 were meant for dairy, sheep, goat and poultry units. These units are capable of yielding additional income of the order of Rs. 1400 to Rs. 1900 per family per year. The next largest amount of credit (about 25 per cent) has been taken for animal-driven carts. Cart units provide as income of more than Rs. 3000 per family per year. These income increases are significant since the poverty line is about Rs. 3600 per house-hold per year. The share of loans for minor irrigation, cottage industry activities and other service activities in the total credit is relatively small about 5 to 7 per cent each

When the Quick Survey of the PEO was carried out, sufficient time had not elapsed for the full income effects of assistance to have accrued. But among the surveyed families those who received animal carts or animal husbandry units were confident of earning Rs. 2500 or more per annum after an initial time lag.

Problem of Idle Hands

One of the serious causes of poverty in India is acute unemployment. Millions of house-holds are unable to get gainful work for more than six months in a year. The only effective way of expelling poverty of this kind is to generate additional employment opportunities that does not supplant but supplement the existing quantum and pattern of employment of the under employed. The Food-for-Work Programme is designed precisely for such a purpose and for such persons

Encouraging Result

Launched in April 1977, the programme picked up substantially during its second year : 1978-79. While in 1977-78 about 1.25 million tonnes of food grains (wheat, milo, rice) were utilised to provide work and wages to the under-employed and unemployed, in 1978-79 over 12 million tonnes of grains were utilised providing 120 million man days of employment. Projects selected under the programme are asset building projects in the rural areas. In fact, in some areas, the programme has picked up so rapidly that the available technical personnel is not able to formulate enough projects to absorb the available man power. During 1979-80 it is expected that the food grains worth about Rs. 200 crore will be gifted by the Centre to the States for the Food-for-Work Programme.

There are two other categories of poor : marginal farmers and artisans. Given the ownership pattern of agricultural land in India, a vast number of farmers are marginal and small whose holdings are very By and large, these farmers have been denied i ment assistance for establishing irrigation fac Even where canal irrigation facilities are availab inspectors operate the system in such a way tha well-to-do farmers can get adequate irrigation. C the major plans of the Sixth Plan is a massive crease in irrigation specially minor irrigation fc marginal and small farmers to double their o income and employment. During 1977-78 an all record has been set up (both for the country abroad) in terms of the area brought under irri in a short time. Extensive irrigation will have a found impact on ending the poverty of million marginal and small farmers.

Problem of Artisans

No serious assault on poverty can be con without a large scale attack on the problems c buting to the poverty of the artisans. The only the artisans have is their skill. The shortage of fin raw materials and market support are the main fa which keep the artisans poor despite lot of swea toil. Of these shortage of finance is the most deb ing factor. For the first time a new deal has promised to the artisans. The Government de in December 1978 that banking sector will hence provide credit to the artisans on their own per security upto Rs 25,000. The bank credit will composite and include short, medium and long needs. Credit will also include provision for essential consumption needs. The period of r ment will be scattered over 7—10 years allowing n torium of about 18 months, all these at a reaso rate of interest.

An equally important measure of support to art is the plan to establish Rural Marketing & Se Centres at the Block level. The Marketing & Se Centres will carry out a census of artisans in the b and maintain a record of their income, employment difficulties. The aid programmes of these centres be determined by the nature of the problems rep by the artisans and where required help in procu raw materials, establishing links with mark channels and obtaining credit from the banks.

The attack is systematic It assimilates sectoral area development strategies. It concentrates on target households without losing sight of the nee develop the area as a whole. It is an assault whi certain to humble poverty and indeed usher in a life for the millions who are at the bottom of ladder. ☐

Role of Rural Industries

Ram K. Vepa

Commissioner,

Small Scale Industries

THE pronouncements frequently made by eminent economists and persons in authority that about half the population of the country is below the poverty line has, one fears, tended to make this grim fact somewhat commonplace. It is not often realised that under this appearantly simple statement lies the harsh reality of the grim poverty under which a large proportion of the Indian population live. Unlike in the affluent countries of the West (or even in some of the countries of the Middle-East) poverty is not a matter of relative lack of affluence. In India, when one speaks of poverty, one is speaking in terms of lack of basic essentials, such as adequate food, clothing and housing and the conditions under which some of the poorest sections of the population live are beyond human imagination.

Part of the extent of Poverty is hidden because of the protective nature of the traditional society which operates in India. This is particularly so in rural communities where unemployment does not always lead to disastrous consequences and the family as a whole takes the responsibility for feeding an unemployed person In the urban areas, poverty is much more visible in terms of squalor and slums; but whether in the urban or the rural areas, poverty is a harsh reality that one must reckon with among large section of the population.

The paradox, of course, is that in spite of the many Five-Year Plans that have been implemented since 1951, the extent of poverty does not seem to have diminished in any significant manner. While it is true that certain sections of the population have benefited greatly by the planning exercise and the fall-out development programmes, they have left a large mass of the population, particularly in the rural areas, un affected. It must, however, be conceded that in som of these areas touched by the Green Revolution, ther has been an increase in the material prosperity of th people but even there, such prosperity has tended t flow to a relatively small section of the well-to-d farmers, leaving considerable number of people at th same level as they were before or, relatively speaking even worse then the past.

Another unfortunate fact is that the disparities between the rich and the poor have tended to widen particularly because development programmes hav benefited the well-to-do sections of the population This is, in fact, a replica on a small scale of what i happening in the world as a whole where disparitie between the developed and the less developed countries are widening in spite of massive aid programmes Even within the country, the rural-urban dichotomy is increasing with the result that the development process which was meant to reduce the gulf between the poor and the rich has, in fact, tended to accentuate.

Obviously, eradication of poverty is not an easy matter. There are no short-cut solutions to this massive problem that has affected the country for centuries. Any solution for eradication of poverty must take into account the basic parameters of the rural economy and see how best this can be improved, since, in a sense, it is the village that holds the key to the prosperity of the country as a whole. In fact, the relative failure of the Planning exercise for the last 25 years may well be due to the fact that while this is well recognised in Plan documents, the programmes did not always reflect the priority that [illegible] to be accorded to the village as the central [illegible] the planned economy.

Even in the rural economy, one needs to give a ·ide of place to Agriculture which is the occupation ' nearly 80 per cent of the population. While the dustrial growth of the last 25 years has provided ›me measure of employment in the urban areas, it as made relatively little impact on the rural areas ıd on the country as a whole. More than three-›urths of the population depend on land for their velihood and every effort towards eradication of ›verty must, therefore, begin with solution of the asic agrarian problem. This would involve distri-ution of land to those who till it so as to provide a ake for the farmer in obtaining higher yields The ìreen Revolution that has been successful in some arts of the country would also need to be reoriented) as to ensure that the increased prosperity flowing ·om it is distributed equitably between the rich and ıe poor farmer.

This can only be done if land distribution takes ›lace in a meaningful manner and not in the half-earted way that land reforms have been implemented ı the past. In this connection, the example of Japan oon after the Second World War, when all previous ights on the land were abolished and it was distri-›uted to the tiller which immediately raised the pro-uctivity of agricultural operations needs to be emu-ated. Similarly, in China with the establishment of he rural communes and the responsibility for agricul-ural productivity given to production Brigades and eams, there has been an upsurge in the productivity ıf the agricultural sector. With only 11 per cent of and surface under cultivation, the country is able to ›roduce as much as 300 million tonnes of foodgrains ıs against half the quantity which we in India pro-luce with a greater area of land under cultivation.

However, increased agricultural productivity is ıecessary but not sufficient; one needs to supplement t with a large number of other occupations which ›rovide the basis infrastructure for increased prosperi-y. This could take the form of allied occupations uch as fishery, dairy, poultry, piggery, etc. and also he establishment of a large number of rural indus-ries that primarily depend upon local raw materials ınd utilise local skills. There is also the revitalisa-ion of rural artisans—the potter, the blacksmith, the arpenter, the tanner—who, at one time, used to per-orm vital functions to the rural community but, un-ler pressure of modern conditions, have become some-what irrelevant to them. These persons, who in num-ers form a sizeable proportion of the rural work orce, would need to upgrade their skills so that they ecome once again relevant to meet the needs of the ıral community.

It is for this reason that District Industries Centre Programme has been launched on May, 1978, to have a new look at the problem of taking the industrialisa-tion process to the rural areas. In the past, this has been attempted through various programmes, such as Rural Industries Programme, Rural Artisan Pro-gramme, but these have been half-hearted, confined to a small section of the population and to limited area of the country.

The District Industries Centre, on the other hand, is meant to act as a catalyst in extending the process of meaningful industrialisation to the rural areas and to act as a nodal agency for this purpose. Each of the Centres is manned by a General Manager and seven functional managers dealing with a variety of areas, such as Economic Investigation, Machinery & Equipment, Credit, Raw Materials, Training, Market-ing and Village Industries. In addition, the DIC is expected to build strong linkages with other State Governments organisations and decentralised sector institutions so as to form a viable institutional frame-work for the growth of rural industries.

Although the programme was launched in May 1978, the first set of the District Industries Centres went into operation only in September 1978, after completion of the recruitment process and training of personnel. The progress registered by the District Industries Centres for the last six months has been impressive. In the 194 Centres who have provided information, nearly 60,000 new entrepreneurs have been identified, 18,000 project profiles prepared, 44,000 new units registered providing additional emp-loyment to 1.46 lakh persons In 1979-80, the tar-get for additional employment in the 400 DICs which are expected to be operational by August 1979 is one million additional jobs which would be an average of 2,500 jobs per DIC.

In fact, in some States the targets they have set for themselves is much higher. For instance, Tamil Nadu has in its Action Plan for 1979-80 set a target of 8681 persons per DIC followed by Gujarat (8030). In the number of new units also Tamil Nadu has set a target of 1309 followed by Bihar (1071) and Karna-taka (1039). In gross production, Gujarat is first with Rs. 745.79 lakh followed by Andhra Pradesh (Rs. 668.17 lakh) and Bihar (Rs. 523.54 lakh).

As expected, the performance of the programme varies widely : broadly speaking, it has fared [illegible] Rajasthan, Orissa, Tamil Nadu, Gujarat, Andhra [illegible] desh, Karnataka, Bihar and Madhya Pradesh; [illegible] rately so in Maharashtra, U.P., Jammu & [illegible] Kerala and West Bengal. It has yet to [illegible]

1 DPD/79—4

mentum in Punjab, Haryana and Himachal Pradesh while in the North-eastern region, there are obvious problems in terms of human skills and infrastructure.

In the ultimate analysis, the DIC would need to develop a new spirit of entrepreneurship in the rural areas. Such entrepreneurship does exist in these areas. What is needed is a new 'culture' amongst the DIC personnel as well as those of other departments dealing with problems of the rural sector. They would have to provide an environment in which the latent entrepreneurship can be revitalised and made to yield new dividends. Such an environment would consist of libralisation of existing procedures, provision of meaningful information to entrepreneurs and timely availablity of credit, operation of training programmes, generation and diffusion of appropriate technology and availability of adequate marketing outlets for the products of the village industries.

Ultimately, the DICs would need to see the problem of rural industrialisation in a new perspective. No longer can industry be thought of in terms of smoke-filled chimneys but rather as a total m tion of skills and resources already existing area and helping them to grow further. It is context that the Integrated Rural Developmen gramme operated by the Ministry of Agricul 2400 community development blocks acquires cial meaning. In cooperation with this progr the DIC would need to exploit the vast amo potential that exists all around it and to transl skill and resources into products that would n satisfy the increasing demand for a 'good life' rural population but also bring a new meas prosperity to the rural areas.

This is a tremendous task but it can be done, commitment and dedication by the personnel DIC and all those concerned with this pr China, under Chairman Mao, had demonstrate a whole nation can be roused to a new meas heroism in building up the country. Surely, which had witnessed 'miracles' under the lead of men like Gandhiji and Nehru, could demo that in peace time, as under the stress of fr struggle, there is still enough dedication in the try which would make such a task possible

Planning for Poverty

Biman Sen

FOR some time past, there has been an obsession in the minds of the authorities that economic salvation of the country lies only in the development of rural areas. Now-a-days, almost every document speaks of nothing but activities related to rural policy statement on planning and/or development such as rural electrification, rural roads, rural education and so on, as if, rural India is a different identity from the rest. In fact, after reading the present planning or development documents or hearing the strategies to be followed in India's planning, one cannot but get an impression that having in an urban area in India is a crime.

The country is gradually being divided on the basis of languages, already a sharp division has been created between minority and majority communities, between backward and advanced communities. Now, a new dimension has been added to the problem, that is, introduction of division of the country into rural and urban population. We speak of national integration, but in practice, are we not sowing the seeds of disintegration of the country ? Pity is that even in our national plan, this spirit of division has crept in. One should not forget that planning and development is a complex and integrated system, urban and rural development are complementary to each other. One cannot be considered in isolation and given special consideration. Both need equal consideration. Planning priorities should be fixed on the basis of overall-term needs of the country otherwise, our economy will stagnate and the country will never be out of the woods of poverty and suffering.

One should not forget that today rural areas may be tomorrow's cities. This is now, cities like Calcutta, Bombay, Delhi have grown. Perhaps in another twenty years the whole of Punjab may be urbanised

The main rationale, which led to the present obsession is perhaps, that since vast majority of our population depend on agriculture and live in rural areas, they need special consideration and concession, unless, of course, there is some vested interest behind it. One should not forget that prior to the industrial revolution, all countries of the world were essentially dependent on agriculture as the sole occupation and vast majority of the population were living in rural areas. It is the impact of industrial revolution, which changed the picture and reversed the position in countries which accepted industrial development as the instrument of socio-economic changes. These are the economically advanced countries today. However, one should not forget, all the great ancient civilisations which sprang up in India, Egypt, Rome or Greece etc. were all basically city-civilisations or in modern term urbanised civilisation. By sheer force of circumstances, and human needs, the world is again moving toward the same situation. If one looks to the world of tomorrow with futuristic perspective, it will be clear that the highly sophisticated technological society of the future will have to develop a high density urbanised civilisation to spare the much needed land for cultivation and other uses to meet the demand of growing population for essential food and other consumer goods and services. India being an integral part of the world cannot ignore the development taking place in the world and live in isolation from other communities.

Indian planning cannot ignore the fact that in an age of inflation, and highly developed technology, it would be a crime to deny its people full benefit of science and technology to improve their quality of life. In this highly sophisticated technological age, if living wages are to be paid to the workers engaged in cottage industries or handicraft industries, or any labour intensive productive industries or agriculture for their survival only, either the products of such labour should be subsidised or the prices of such products will be

high that very few can afford to purchase them In fact, in modern world cottage industry's products can be classified under luxury good, which is beyond the capacity of an average man to purchase or maintain. Such industries or agriculture which are labour intensive can hardly produce surplus wealth for productive investment which can generate additional employment or demand for additional goods and services.

In view of the above, planning for labour intensive and episodic benefit, will be detrimental to the national economic growth in the long run. For sustaining irreversible growth, a careful consideration is needed for assigning sectoral priorities in the planning

The main objective of this article is to focus some of the fallacies inherent in the Draft Five Year Plan 1977-78—1982-83, for consideraion of the authorities to take such action as may be deemed necessary. It however only touches the fringe of the problem

Draft Five Year Plan

The Draft Plan document published in 1978 says, 'the principal objectives of planning should now be defined as achieving within a period of ten years .

(i) the removal of unemployment and significant under-employment.

(ii) an appreciable rise in standard of living of the poorest sections of the population.

(iii) provision by the state of some of the basic needs of the people in these income groups like clean drinking water, adult literacy, elementary education, health care, rural roads, rural housing for landless and minimum services for urban slums. This plan aims at comparable progress towards achieving these goals.. These primary objectives should be attained while.

(iv) achieving higher rate of growth of the economy than in the past.

(v) moving towards a significant reduction in the present disparities of income and wealth.

(vi) ensuring country's continued progress towards self-reliance".

The above objectives are lofty indeed. There cannot be any difference of opinion about needs of implementing them. Now the question is, at this stage of economic development of the country, and the strategies adopted in the draft plan, can it generate enough surplus wealth to undertake such welfare schemes as given in the objectives? Do we want our development process to be spasmodic and episodic to achieve spectacular result for a short time or we want to have sustaining irreversible economic growth to sustain all these activities on a long term basis. Should we fritter away our limited capitals in activities which cannot be sustained or should we build up a strong economic base first and then promote these activities on a sustaining manner for all time to come as others have done it.

It may not be difficult to provide more primary schools, or adult education, or create more sustaining employment but can they be sustained long without economic growth ? Will it not, be better to conserve much needed capital for investment, first on such activities which will generate surplus wealth—and create condition for irresisible economic growth ?

It is not understood, why, in the objectives, a phrase like "achieving higher rate of growth than in the past" occurs. The question is whether 4.7 per cent growth rate, with high population rise and inflation, is sufficient to promote irreversible economic growth for improving the quality of life of our people. Is it not too low for the purpose? With proper priorities, much higher rate of growth can be achieved with the infra-structure already created in the country, if one keeps in mind the economic success of the countries like Japan, Korea, Hong Kong, Taiwan etc.

It may be desirable to clarify some of the reasons which led to low growth rate in the past. The country was busy earlier in building up proper infra-structure required for rapid economic growth. Economic development of a developing country has a gestation period, when growth-rate is low Moreover, three wars were thrust on the country, which diverted much-needed "capital" for economic development to war efforts. Coupled with it, foreign assistance were meagre and foreign exchange position was hopeless. There are no such constraints when we are embarking the new plan for development. Now we have better foreign exchange situation, more promise of aids, a fairly good infra-structure, then why such low growth rate has been envisaged in the plan; obviously, something wrong, somewhere which needs investigation.

It is also not clear, how with such low rate of economic growth, disparities of income and wealth could be reduced? Will it then be by distributing poverty between the urban middle class and rural poor ?

Some of the basic components of the plan as envisaged in the Draft Plan document, specially the employment outlook show that the strategy is more in favour of distribution of poverty than distribution of wealth and income for healty growth of entire population.

be forgotten that the mass production of articles fo merly made by hand, have revolutionised social life t giving the consumers a large access to goods and se vices reserved to a small number of elite. The produc of cottage and handicraft industry are luxury items bo in terms of availability and cost.

Basic Strategy Adopted

The prime objective of the draft plan is to remove the unemployment and under-employment, for which basic strategies in the plan are

(i) efforts to generate more employment in agriculture and allied sectors.

(ii) to generate employment by encouraging expansion of cottage and small scale industry more and

(iii) through provision of minimum needs.

Can the unemployment or under-employment be solved, without solving the basic economic problems? Assumption that the strategy of employment adopted in the plan will not only generate more employment and create surplus wealth by increasing base of distribution of goods and services—but also will create climate for additional employment, is itself a major fallacy.

For generation of employment and correction of under-employment, too much emphasis has been given on the rural and agricultural development, as they could be labour-intensive. The plan also assumes that by diverting development fund to the rural sector, all our economic and social maladies—like poverty, unemployment, ignorance, superstition will be cured. Thus the plan is more a wishful thinking than solution to economic problems.

Growth Pattern in the Draft Plan

The sectoral growth pattern as envisaged in the draft plan during 1977-78 to 1982-83 is as shown in the table.

For a developing country like India with the potentialities both, in the term of capital, natural resources and trained technical manpower, the growth rate in all the sectors seems to be on the low side. Specially industrial growth rate as envisaged in the plan is too low. Main emphasis on the industrial sector has been given to cottage and handicraft industries—which have very low potentialities for growth of capital. It should not

Employment Strategy

In the plan, it is said that since the growth of employment in large and medium industries is incapabl of absorbing more than a small fraction of the labou force, the employment strategy in the plan has there fore been worked out on the following basis.

(i) to adopt an employment intensive sector planning.

(ii) to regulate technological changes to protec and enhance employment; and

(iii) to promote area planning for full employ (NB. of the three, (ii) is most dangerous)

To achieve the objectives emphasis has been laid for creation of employment in the rural sector—on the assumption that this strategy will create condition for increased consumption among poor, which, in turn, will create additional employment on paper and mathematical calculation, it may be an excellent idea, but in practice the result would be reverse. We should try to learn from the experience of others. There is nothing wrong in it to learn from even the smallest country.

All the industrially advanced countries have come to the present stage of development only through mas-

Growth Pattern

Sector	Growth rate of percentage (output)
(1) Agriculture	3 98
(2) Mining and Manufacturing	6.92
(3) Electricity	10 80
(4) Construction	10 55
(5) Transport	6 24
(6) Services	6 01

Total growth rate—4.7 per cent per annum.

sive industrial development programme. It is wrong to think that capital-intensive industry has low employment capacity. It is so, if one takes only the direct employment in the plant itself—but one should not forget, how much employment it creates in primary and tertiary sectors as well as in the allied secondary sector. Take for example steel or any chemical industry. It generates employment in other sectors like mining, machine tool, power, storing, packaging, transport, training and so on. Therefore, employment generation should not be computed on the basis of direct employment only. Capital intensive industries, having large turnover, can create, much more jobs indirectly than one can think of Such volume of jobs within a short time, cannot be achieved through cottage or handicraft industry which are based on individual skills.

Unfortunately, in our country we have never given a chance for proper growth of capital intensive industry --through restrictive-practice, fixing of un-economic production targets, highlevel of taxation etc.

In addition human factor should not be ignored—they have a natural tendency to migrate for better occupational pastures.

One cannot but appreciate the ingenuity of computing employment figures in the plan, which has not been done on the basis of additional jobs to be created but growth of employment has been computed on the basis of "person-year". In the agricultural sector "increase in persons-year"—will never indicate the correct picture of new employment generation as it will contain large amount improvement in sub sectors.

Analysis of the Plan and its impact

Before going to the analysis of the Plan and its impact, he questions that immediately come to one's mind are why a plan, for whom the plan and what purpose for the plan ? Answer is obvious, the main aim of plan in any country is to improve the quality of life of its people. The purpose of a plan is to generate as fast as one can wealth for irreversible economic growth which can be sustained without difficulty. Therefore in the first stage of planning—more emphasis should be given to wealth generating sectors. This may sometime look as if the plan is devoid of human aspect specially distribution of social justice. However, one must understand that unless, self-sustaining economic growth could be attained, equitable distribution of social justice would not be possible. Lack of understanding of this is one of the reasons why Indian economy has stagnated so long. Any attempt to distribute wealth, before self-sustaining capital is built up, will only result in self-dying economy—like killing the goose which lays golden eggs.

As one cannot go against the laws of nature, economic development has a dynamic of its own and sequences of operation. According to the rule of thumb as accepted by some economists, under development can be recognised by the very high proportion (70 to 90 per cent) of active population engaged in agriculture and allied activities, as advanced stage of economic development is recognised by indices like consumption steel or energy. The reason being that yields from labour intensive and unmechanised agriculture tends to be low, thus very little surplus become available for productive investment or diversification of consumption pattern.

A careful study of post war (World War II) trends in Europe and other countries over a decade, or so, establishes, be and doubt, a close relationship between economic growth and changes in employment pattern and structure. Most of the countries which have shown high rate of growth have to adopt large scale industrialisation although, some of them were purely agricultural countries before the World War II. With the progressive economic growth, percentage share of employment rapidly increase in the industrial sector and sharply decline in agricultural sector and allied sector. This can be achieved only by modernising agriculture with the application of up-to-date science and technology which, in turn, needs backing of an up-to-date industrial base. Any attempt to check this natural growth process will only result in socio-economic breakdown of the country leading to anarchy and chaos. The world experience also shows that ultimately largest employment generation potential lies in the services sector, of which, education can absorb very large body of men. However, service sector can be expanded on a large scale only after agro-industrial base has been put on firm footing. In this context example of two countries may be quoted for reference.

The revolution of, U.S. farming over last fifty years shows what results could be achieved by highly [illegible]

alised agriculture and investing in industrial development. In fact, today, in U.S.A., agricultural farms can be classified as highly capital-intensive industry. USA holds less than five per cent of is active labour force in farming activities against over more than 50 per cent in early 1920s. Today, in USA, a farm size of 120 hectares investment in machinery and equipment would be about $ 40,000, not to speak of investment in storage space etc. This has paid American nation a high dividend. It has made USA possible to export agricultural products worth over $ 21,000 million per year. (Refer—Focus—American Agriculture). Another country is Japan. During the last thirty years, in spite of its topographical dis-advantages, employment in agriculture has come down from over 50 per cent to less than fifteen per cent of the labour forces. During the last decade or so Japan has achieved fantastically high economic growth.

Today Japan has become truly industrial country in the East and one of the largest economic power in the world. In 1946, just after the war, the country's economy was shattered to pieces. According to available information, in 1946, Japan had a labour surplus economy holding more than 12 per cent unemployed. Within fifteen years in early 1960s, it converted its labour surplus economy to labour shortage economy. This has been achieved only through large scale industrialisation. Japan's experience shows that for massive employment generation, there is a need for diversification of economy through expanding industrial base. This can easily be achieved by bold industrial and economic policies and not by hearted measures.

In his context, it may be interesting to analyse one or two issues and see how our plan is more tuned to distribution of poverty than solving economic problems.

India has vast resources of iron ore which Japan does not have. In spite of that Japan, expanded within twenty years its iron and steel industry from 7 66 million tons in 1953 to about 120 million tons in 1973. Against this our target is to increase steel production from 7.73 million tons in 1978 to about 11.8 million tons by 1983. Even China is planning to increase its steel output from 17 million tons to about 80 million tons by 1980. Steel is a basic commodity for industrial development. Today, our country is short of all essential commodity like, steel, cement, power, transport, etc. Why ?

Take our employment policy in the plan, it envisages that more employment will be created in agriculture sector when it is already holding more than it could accommodate. Contrary to world experience, employment in agriculture in India has stagnated since 1920s. In 1921 agriculture in India was holding about 73.1 per cent of the labour forces, in 1971 it became 73 8 per cent and at the end of 1983—perhaps, it may be worst. Only country has lined up with us in this respect is Burma. The labour holding in agriculture shows our status in the developing world.

As regards utilization of sophisiticated trained manpower like engineers, technicians etc. it is surprising that in the Plan it has been visualised that unemployment among engineers will increase from 2 4 per cent of the stock to 2.9 per cent and that of technician will increase from 10.4 per cent to 15.9 per cent by 1982-83, although there has been a cut back in admission for engineering colleges and polytechnics since 1966. This is one of the major weakness as of the draft plan. Consequence of this may be far reaching for economic development of the country vis-a-vis neighbouring countries. It may also serve as a disincentive to the students going in for technical education. In this context it may be stated that if one engineer could be fruitfully utilized, it creates as much as 200/250 jobs, of which more than half is for unskilled workers.

If this situation continue days are not far away, when self increasing urbanisation, rising unemployment among technologically qualified persons and increasing modren consumption habits of more economically advanced states like Punjab and Haryana, which are bringing new outlook and goals and which are building up increasing friction between traditionalist and modernist, may assume an explosive situation leading to a socio-economic revolution, thus disturbing the stability of the country. The time has come, for rethinking of changing the startegies of plan from low rate of growth to high rate growth situation. It may be necessary to defer some social service programmes like adult education, universal education etc. which cannot be sustained without backing of huge financial resources and which the present economy of the country is unable to provide.

Planning for prosperity—suggested strategy

World experience shows that material prosperity of a developing country depends on its capacity to create environmental situation suited to rapid economic growth which will generate much needed surplus capital for ploughing back to productive expansion

leading to sustained and irreversible economic growth. Only such a situation can ensure more equitable distribution wealth and income, thus remove poverty and sufference.

It should be understood clearly that for irreversible economic growth, there is an incubation period—duration of which varies according to strategies of planning adopted by a country. In the economic jargon, it is known as take off period. Only after a country has completed the take off period, self sustaining growth is possible. For reducing this period, planning has to be pragmatic and initially many sacrifices are necessary specially by delaying programme related to social justice like—full employment, free education, national health services etc. which do not directly contribute to generate surplus wealth for productive investment. Unless, this is done, the development will be sposmodic and episodic and ultimately delay the take off stage, thus extending the perpetual suffering.

According to economists like W. W. Rostow, Dr. Kuznet—"Three related conditions must be fulfilled before take off stage can occur—firstly a rise in net investment rate from 5 per cent of national income to 10 per cent or more, secondly the emergency of one or more substanital manufacturing industries with very high rate of growth to act as romoter to set general pace of development, and thirdly institutional framework so as to favour the growth. The take off period for most of the industrial countries varied between 12 to 30 years. However most of them reached this stage before the close of 19th century. Japan took least time to reach the stage although Great Britain reached it earliest; as far back as in 1802, France by 1860, Japan by 1900, Russia by 1914 and so on. The study of these countries shows that after take off period, there is a period of industrial maturity, followed by mass consumption. However Canada and Australia skipped the middle stage. It is also observed from the studies of these countries that during the incubation period, there had been simultaneous agricultural revolution through use of land reform—by consolidation of scattered and fragmented land holdings into economic units needed for crop-rotation, mechanisation, better transport and marketing etc. along with rapid industrialisation. The nature of industrialisation varies from country to country, in UK it was textile and machines, in France, it was railway and allied activities, in Germany, it was iron and steel and so on.

India has the capability and capacity to generate rapid economic growth; provided it can improve the organisational and managerial capabilities and discard rigidity and assign proper priorities to different sectors on the basis of stage of development. It may not be difficult for India to achieve rapid economic growth by changing its economic and industrial policy and make planning more pragmatic without being led by emotion and sentiments.

India is lucky to have one of the best assets i.e. trained manpower of quality and number which are under-utilizaed. Instead of exporting raw materials like iron ores etc., processed and semiprocessed material need to be exported. For this purpose, indegenous machine and equipment should be used. We have both the basic knowhow and trained technical manpower, which has not so far been fully exploited. Without properly trained manpower of India, it has been possible for countries like Korea, Singapre etc. to achieve high rate of growth by exporting finished product. Why cann't India with all its resources do it ? Reason is lack of understanding of stagewise allocation of resources during planning and lack of clear industrial policy.

Rigidity and traditionalism are the bane of our country, for which we, as a nation, are suffering. Although it is known that any suggestion given will be a cry in the wilderness, yet, following suggestions are given on the basis of world's experience and keeping in view the ultimate good of the country :

(i) Re-scheduling of planning priorities and distribution of capital for sector-wise development;

(ii) Steel, cement, machine tool and power etc. should be made the targets for development as these are basic industries which can create condition for rapid economic growth and a climate for generation of employment a faster rate on a cascade form than any other way. It will stimulate growth of other industries and primary and tertiary sectors.

(iii) Since ultimately the government has the power to control any industry, the door should be opened to private sector for investment freely without any restriction.

(iv) Land reform should aim at consolidation of fragmented and scattered holdings through cooperatives for rapid modernisation of agriculture through machanisation and application of technology, thus creating condi-

tion for rapid growth of agricultural products.

(v) Taxation policy should be rationalised, to stimulate more domestic saving. Instead of recovering large amount of tax from a few consumers; it should create condition to increase the base of consumers—which will give government an opportunity to collect more taxes with less tax burden and create conditions for larger number of consumers access to goods and services.

(vi) Roads and communication system to be rapidy improved for quicker transportation of goods and services from one part of the country to another thus stimulate marketing of surplus from one part to another. It will also generate jobs for large number, who will be surplus from agriculutre and allied sector due to modernisation;

(vii) For need based programme, the community is capable of taking care of these programmes. In the past, they have shown their capabilities in many parts of the country. It is not found which is needed, but they need the assistance of managerial skills and other services, which could be provided—through reorganisation of the present administrative system from law and order system to economic development oriented system.

(viii) No use multiplying primary schools system, as is being done at present, resulting in a large wastage. Over 40 per cent of schools are with one teacher taking care of children of various age groups simultaneously. The schools are without basic facilities. There are other ways of propagating universal education with the help of local community, which does not cost money or cost minimum.

(ix) At this stage of economic development where over 40 per cent of population is below the poverty level, what is the use of education for them ? What they need is food, shelter and clothes which cannot be provided without rapid economic growth. Then what is the use of investing large sum of money for adult education ?Adult education objectives can be better achieved as a movement involving entire population, rather than diverting much needed capital for economic development. Adult education will come as a by-product of economic development, not in isolation. What is needed is mobilising a few dedicated workers in every state, which does not cost money. There are organisations which are already doing it without even recognition from the government;

(x) At this stage, much needed funds should not be diverted for unproductive investments like—production of all science and technological books in regional languages etc. Better investment could be made by improving present system of education. As and when the country has acquired enough surplus wealth, we may divert funds for such activities. At this stage, let us concentrate on the more immediate and productive investment and training of highly sophisticated technical and scientific manpower and strengthen R & D Organisation.

For socio-cultural changes, nothing could be achieved by isolating individual sector and trying to solve problems in isolation.

It should not be forgotten that world experiences show that, employment generation, compulsory free education, national health service schemes etc. are not primary products but by-products of rapid economic growth which is responsible for bringing socio-cultural changes. For socio-cultural changes, nothing could be achieved, by isolating individual sector and trying to solve problems in isolation. Planning is a complex integrated system, one single element cannot be considered in isolation and haphazard way. It obeys certain laws and motives and sequences. Any action against the laws, the entire structure of planning falls. One cannot build a multi-storey building without proper foundation and proper sequences in structural construction. No body can provide fittings and fixtures or line in it, before the structural part is completed and tested for safety. We have still time for re-thinking of our future. Nothing should be done in a hurry under emotional strain. □

Employment Implications Of Small And Village Industries

Dr. D. B. Gupta
&
S. P. Bagla

Planning Commission

A major problem facing India today is to find ways to provide employment within her limited resources to an estimated 60 million persons, vho are effected by various degrees of unemployment t one time or another. The unemployment problem s particularly serious in rural areas where the employ-nent situation has not shown any improvement. A alient feature of rural unemployment is that whereas hronic unemployment is confined mainly to persons vith higher educational qualifications, underemploy-nent is pecular to the illiterates and semi skilled rtisans. There is as yet hardly any evidence to indicate at the present increasing trend in farm population likely to be arrested in the near future. What then e the prospects for agriculture offering employment these growing numbers of people?

Given the constraint of resources, a choice is inevitable between encouraging agriculture and encouraging industry. The simplest example is that of the choice between providing credit for a tubewell or for a new piece of machinery. Short of a full blown cost-benefit analysis, are there any general points that can be made in favour of industry or agriculture?

The implications for industrial development are clear. Because of the squeezing out of the small land holdings, the small cultivators will join the ranks of the agricultural labour households. Disguised unemployment will become open unemployment. Furthermore, the complementary process of mechanisation in agriculture will reduce the ability of the new varieties to absorb the new unemployed. Evidence from studies of tractorisation shows that while mechanisation may offer more man-hours of employment, the number employed is reduced There is debate on the former issue, but on the latter there is agreement that tractors create demand for permanent servants and replace casual labour Looking at the trend of agricultural development, therefore, there is a definite role for industry to play in absorbing the labour forced out of the land. Industry, however, is just another important employment avenue. There are other employment generating programmes such as public works programmes. However, the public works approach to unemployment will make sense if it is so organised that there will be progressively less and less reliance on it, so that ultimately it becomes redundant. Its role should be accepted as transitional, and deliberate efforts should be made to rehabilitate those engaged in public works within the mainstream of the economic activity.

Strategy for Industrial Development

In any case, there is strong enough case for enlarging the industrial sector for providing employment. The question is, given the employment objective, what should be the strategy which ought to be pursued for industrial development? Should we rely entirely on labour intensive techniques or entirely on capital intensive techniques or perhaps a mix of the two? Later on, we will also be concerned with such questions as the type of goods to be produced. While considerable work has been done in the field of techniques of production, our knowledge with respect to the efficacy of labour and capital intensive techniques remains quite vague This calls for further empirical work. It is well known that capital-intensity varies considerably between large scale and small-scale industries. In the factory sector itself, the fixed capital per employee was nearly Rs. 2000 (at the lower scale and Rs. 18,000 at the upper scale in 1965). Such variations in capital intensity also arise from the peculiar nature of a particular industry. For example,

in a survey of Rural Industries Projects in India. (Based on a pilot survey of seven projects under the Rural Industries Projects Programme of the Government of India which had been undertaken at the Institute of Economic Growth, Delhi) we found that for the non-household industries fixed capital per man varied from Rs. 100 in pottery to Rs. 12,857 in engineering. The average was Rs. 6588. For the household sector, it ranged from Rs. 150 per man in the basket making industry to Rs 25,750 per man in poultry. The average was Rs. 2662 per man. Similarly, within the small and cottage industries sector, fixed capital employment ratio varies greatly. According to a rough estimate for mechanised sector of small scale industries, the capital employed per man, on an average basis in 1977-78 was Rs. 6,722; for traditional industries like handlooms, khadi and village industries, it was Rs. 670. This range of variation is sufficient to enable us to characterise the techniques used in various industries in relation to their employment and productivity potential. Thus, given the policy objectives, an optimum mix of industries can be selected to be undertaken in the lagging regions.

A difficult problem in the rural areas is to create, maintain and expand non-agricultural employment. This echoes the conflict noted in the literature between the level of employment and growth of employment. As Stewart and Streeten have noted,

> "It is common to assume in this context that a capital intensive technique leads to a higher saving ratio for the same income level than a labour intensive technique. On this assumption, lower employment now can give faster growth of both output and employment."

This, however, cannot be treated as a complete view of the situation. Employment provides the additional satisfaction of being employed It reduces the diseconomy of enforced leisure.

Apart from the question of a conflict between the creation and expansion of employment in the context of a particular programme or technique, which pays little attention to the underlying economic mechanisms, we need to examine the behaviour of profits and wages. On many occasions, we may have to ignore purely technical considerations. For example in India's context, despite low wages for Khadi workers (according to one Study, khadi worker on the average had an annual earning of Rs. 34.7 in 1953-54 and Rs. 348 in 1977-78), we continue to promote khadi simply to deal with our specific problems namely to reduce the extent of underem loyment and to provide a source, howsoever, meag it is, to supplement the family income.

The relationship between profits and capital-ou put ratio on the one hand and between wages a capital-output ratio on the other are not necessar inverse because of the behaviour of raw material cos If more capital intensive techniques and higher wag per man are associated with high raw material co per unit of output, the scope for an increase in prof remains limited.

In this context, it is also necessary to consider t distinction between fixed and working capital. Do use the two together in working out capital-labo ratios, or do we just use fixed capital. Amartya S argues the following:

> "Mechanisation is concerned with m chinery and possibly other types of fix capital, like buildings, but working ca tal would not be included under th heading. For capital intensity, howev it is necessary to include working ca tal. The ratio of working capital physical capital in different forms investment may very quite widely a will frequently tend to be higher f relatively less mechanised technique

Furthermore, there is one aspect of the fixed capit working capital split that is particularly relevant in t context of any programme of rural industrialisati (as well as in the small scale sector), i.e., the availal lity of credit. Credit for fixed capital is of a 'once f all' nature whereas credit for working capital is co mitment over a long period of time. Though it m be repaid at the end of the year, it will have to made available again the next year, and so on. T relationship between funds for 'once for all' cre and the future comitment to make available funds a regular basis is crucial so far as the financial imp cations of alternative programmes are concerned. (F industries in rural areas, whether run as househo or as non-household industries, the aspect of cre availability for working capital is crucial because m people who undertake or who are expected to underta industries are people with extremely limited financ capacity.) In this context, it is interesting to also co sider the relationship between working capital a output According to a rough estimate the output p rupee of working capital is 4.26 in the small sca mechanised sector when compared to 1.63 in t traditional sector, indicating that output-worki capital ratio is high for industries with high fix capital intensity.

We have to resolve another important issue, namely, ; confict between employment and output. A study the relationship between capital-output ratio and ›ital-labour ratio will be particularly instructive to :ntify preferred industry groups, to evolve a profile types of industries under a particular strategy foi lustrial development with focus on employment :ation. We may postulate a series of dynamic relation-ips, ". . . the continuous nature of gradual improve-:nts over time springs from the recognition that exis-ıg capital equipment may be redesigned to increase effectiveness. It is the experience with existing capital uipment which is ultimately responsible for innova-›n and replacement of old processes by new. The tempt to favour labour intensive methods in the terests of employment creation, therefore, may in e long run seriously inhibit pace of technical change."

The empirical evidence available at present on some ' the issues and propositions outlined above is too adequate to reveal the relative merits of various ternative industrial strategies to be pursued with ırd to the techniques of production, as well as about type of industry and production to be undertaken ı a view to creating and sustaining employment vth. Unfortunately, considering the present alarm-trend of unemployment in India and its social, ıomic and political implications, it is difficult for :o postpone this problem until sufficient empirical lence becomes available. Thus given (i) the urgent d for a solution to the unemployment problem; the limited employment potential of agriculture;) the transitional nature of the public works ap-ach to the unemployment problem; (iv) the scar-of both physical and financial resources; and (v) need to change the nature of the occupational :ern in favour of non-farm occupations, especially ıstry, we need to evolve a development strategy ch attempts to provide employment to the vast ısures of the rural unskilled labour force at mini-m cost.

Rural Industrialisation

\lmost since the beginning ›f planned economic elopment the Government has shown awareness .he problem and has set up a number of specialised ırds for the development of village and small scale ustries both in rural and urban areas. In March, 78, employment in small scale industry, including non-factory sector was put at 58.9 million and ss total output at Rs. 13,200 crore. In 1977-78, ler Khadi & Village Industries (within the purview Khadi & Village Industries Commission) nearly million persons were employed monstly part-time. They produced goods forth Rs. 257.43 crore and their wage bill amounted to Rs. 81 crore. However, it apperas that rural industrialisation was not an overriding or even an important policy objective of planning. There were, of course, references in the plans to 'unbalanced occupational structure' and 'large scale unemployment' in rural areas. But plan allocations of investment have been comparatively meagre. For instance, the First plan made a provision of Rs. 270 million for cottage and small scale industries, compared with Rs. 3270 million of investment in heavy industry Out of Rs. 3270 million, outlay in the public sector was only Rs. 940 million, thus restricting Gov-ernments' ability to influence location. Further, there is evidence that the locational aspects did not get full attention in the small-scale industries development programme. Apart from the delay in starting the programmes many of the industrial estates designed for the purpose got located in or around the urban areas and their effect on providing employment to the rural folk was minimal The Second Plan referring to the 1956 Industrial Policy Resolution emphasised that "In order that industrialisation may benefit the eco-nomy of the country as a whole, it is important that disparities in the levels of development between regions should be progressively reduced." The percentage of total outlay in village and small industries rose from 1.3 per cent in the First Plan to 4.1 per cent in the Second Plan. But the allocation to large industries (including minerals) increased from 6.3 per cent to 14.4 per cent. While in the First two Plans, emphasis was on decentralisation, both the Third and Fourth Plans took into account the locational aspects : "The general approach has to be to avoid further concen-tration of industrial activity in areas where consider-able development has already taken place or been planned" (India's Third Five Year Plan). During the Third Plan the Government also started a new programme, called the "Rural Industries Projects Programme", on a pilot basis in 49 districts. (Later, the number of districts covered under the Rural In-dustries Programme was increased to 111. This Pro-gramme has now been abandoned in favour of the District Industries Centres. The main focus of this Programme was on industrialising the rural areas with a view to reducing dependence on agriculture, and enlarging the industrial sector within the country side. (In 1970-71, 49 Rural Industries Projects offered employment to 1,33,343 persons with an industrial output of Rs.739.6 million and an investment of Rs. 185.8 million.)

Despite several programmes of industrial develop-ment, the pattern of occupational distribution of the working force has not shown any meaningful change. Large-scale industries which were supposed to serve

in a survey of Rural Industries Projects in India. (Based on a pilot survey of seven projects under the Rural Industries Projects Programme of the Government of India which had been undertaken at the Institute of Economic Growth, Delhi) we found that for the non-household industries fixed capital per man varied from Rs. 100 in pottery to Rs. 12,857 in engineering. The average was Rs. 6588. For the household sector, it ranged from Rs. 150 per man in the basket making industry to Rs 25,750 per man in poultry. The average was Rs. 2662 per man. Similarly, within the small and cottage industries sector, fixed capital employment ratio varies greatly. According to a rough estimate for mechanised sector of small scale industries, the capital employed per man, on an average basis in 1977-78 was Rs. 6,722; for traditional industries like handlooms, khadi and village industries, it was Rs. 670. This range of variation is sufficient to enable us to characterise the techniques used in various industries, in relation to their employment and productivity potential. Thus, given the policy objectives, an optimum mix of industries can be selected to be undertaken in the lagging regions.

A difficult problem in the rural areas is to create, maintain and expand non-agricultural employment. This echoes the conflict noted in the literature between the level of employment and growth of employment. As Stewart and Streeten have noted,

> "It is common to assume in this context that a capital intensive technique leads to a higher saving ratio for the same income level than a labour intensive technique. On this assumption, lower employment now can give faster growth of both output and employment."

This, however, cannot be treated as a complete view of the situation. Employment provides the additional satisfaction of being employed. It reduces the diseconomy of enforced leisure.

Apart from the question of a conflict between the creation and expansion of employment in the context of a particular programme or technique, which pays little attention to the underlying economic mechanisms, we need to examine the behaviour of profits and wages. On many occasions, we may have to ignore purely technical considerations. For example in India's context, despite low wages for Khadi workers (according to one Study, khadi worker on the average had an annual earning of Rs. 34.7 in 1953-54 and Rs 348 in 1977-78), we continue to promote khadi simply to deal with our specific problems namely to reduce the extent of underemployment and to provide a source, howsoever, meager it is, to supplement the family income.

The relationship between profits and capital-output ratio on the one hand and between wages and capital-output ratio on the other are not necessarily inverse because of the behaviour of raw material costs. If more capital intensive techniques and higher wages per man are associated with high raw material costs per unit of output, the scope for an increase in profits remains limited.

In this context, it is also necessary to consider the distinction between fixed and working capital. Do we use the two together in working out capital-labour ratios, or do we just use fixed capital. Amartya Sen argues the following:

> "Mechanisation is concerned with machinery and possibly other types of fixed capital, like buildings, but working capital would not be included under this heading. For capital intensity, however, it is necessary to include working capital. The ratio of working capital to physical capital in different forms of investment may very quite widely and will frequently tend to be higher for relatively less mechanised techniques."

Furthermore, there is one aspect of the fixed capital-working capital split that is particularly relevant in the context of any programme of rural industrialisation (as well as in the small scale sector), i e , the availability of credit. Credit for fixed capital is of a 'once for all' nature whereas credit for working capital is commitment over a long period of time. Though it may be repaid at the end of the year, it will have to be made available again the next year, and so on. The relationship between funds for 'once for all' credit and the future comitment to make available funds on a regular basis is crucial so far as the financial implications of alternative programmes are concerned. (For industries in rural areas, whether run as household or as non-household industries, the aspect of credit availability for working capital is crucial because most people who undertake or who are expected to undertake industries are people with extremely limited financial capacity.) In this context, it is interesting to also consider the relationship between working capital and output According to a rough estimate the output per rupee of working capital is 4.26 in the small scale mechanised sector when compared to 1.63 in the traditional sector, indicating that output-working capital ratio is high for industries with high fixed capital intensity.

We have to resolve another important issue, namely, the confict between employment and output. A study of the relationship between capital-output ratio and capital-labour ratio will be particularly instructive to identify preferred industry groups, to evolve a profile of types of industries under a particular strategy for industrial development with focus on employment creation. We may postulate a series of dynamic relationships, ". . . the continuous nature of gradual improvements over time springs from the recognition that existing capital equipment may be redesigned to increase its effectiveness. It is the experience with existing capital equipment which is ultimately responsible for innovation and replacement of old processes by new. The attempt to favour labour intensive methods in the interests of employment creation, therefore, may in the long run seriously inhibit pace of technical change."

The empirical evidence available at present on some of the issues and propositions outlined above is too inadequate to reveal the relative merits of various alternative industrial strategies to be pursued with regard to the techniques of production, as well as about the type of industry and production to be undertaken with a view to creating and sustaining employment growth. Unfortunately, considering the present alarming trend of unemployment in India and its social, economic and political implications, it is difficult for us to postpone this problem until sufficient empirical evidence becomes available. Thus given (i) the urgent need for a solution to the unemployment problem; (ii) the limited employment potential of agriculture; (iii) the transitional nature of the public works approach to the unemployment problem; (iv) the scarcity of both physical and financial resources; and (v) the need to change the nature of the occupational pattern in favour of non-farm occupations, especially industry, we need to evolve a development strategy which attempts to provide employment to the vast measures of the rural unskilled labour force at minimum cost.

Rural Industrialisation

Almost since the beginning of planned economic development the Government has shown awareness of the problem and has set up a number of specialised boards for the development of village and small scale industries both in rural and urban areas. In March, 1978, employment in small scale industry, including the non-factory sector was put at 58.9 million and gross total output at Rs. 13,200 crore. In 1977-78, under Khadi & Village Industries (within the purview of Khadi & Village Industries Commission) nearly 24 million persons were employed monstly part-time. They produced goods forth Rs. 257.43 crore and their wage bill amounted to Rs. 81 crore. However, it apperas that rural industrialisation was not an overriding or even an important policy objective of planning. There were, of course, references in the plans to 'unbalanced occupational structure' and 'large scale unemployment' in rural areas But plan allocations of investment have been comparatively meagre. For instance, the First plan made a provision of Rs. 270 million for cottage and small scale industries, compared with Rs. 3270 million of investment in heavy industry. Out of Rs. 3270 million, outlay in the public sector was only Rs. 940 million, thus restricting Governments' ability to influence location. Further, there is evidence that the locational aspects did not get full attention in the small-scale industries development programme. Apart from the delay in starting the programmes many of the industrial estates designed for the purpose got located in or around the urban areas and their effect on providing employment to the rural folk was minimal. The Second Plan referring to the 1956 Industrial Policy Resolution emphasised that "In order that industrialisation may benefit the economy of the country as a whole, it is important that disparities in the levels of development between regions should be progressively reduced." The percentage of total outlay in village and small industries rose from 1.3 per cent in the First Plan to 4.1 per cent in the Second Plan. But the allocation to large industries (including minerals) increased from 6.3 per cent to 14.4 per cent. While in the First two Plans, emphasis was on decentralisation, both the Third and Fourth Plans took into account the locational aspects : "The general approach has to be to avoid further concentration of industrial activity in areas where considerable development has already taken place or been planned" (India's Third Five Year Plan). During the Third Plan the Government also started a new programme, called the "Rural Industries Projects Programme", on a pilot basis in 49 districts. (Later, the number of districts covered under the Rural Industries Programme was increased to 111. This Programme has now been abandoned in favour of the District Industries Centres. The main focus of this Programme was on industrialising the rural areas with a view to reducing dependence on agriculture, and enlarging the industrial sector within the country side. (In 1970-71, 49 Rural Industries Projects offered employment to 1,33,343 persons with an industrial output of Rs.739 6 million and an investment of Rs 185.8 million.)

Despite several programmes of industrial development, the pattern of occupational distribution of the working force has not shown any meaningful change. Large-scale industries which were supposed to serve

as centres for potential industrial development have not succeeded in fulfilling this limited objective. The employment effects of steel mills and other large industries are known to be quite disappointing. On the other hand the experiment of promoting development in the more remote and backward areas through rural industrialisation has not been very encouraging A large number of units are known to be lying idle or have been closed. Even the so-called small units are working below full-capacity. Perhaps a study of idle capacity in small scale sector would provide us with an idea about the number of additional persons who could be offered employment. In this context, the notion of introducing multiple shifts could also be explored. This is particularly commended in view of the shortage of capital resources. Clearly, these remedies have limited employment potential. There are several reasons for this. First the market for the products of these rural units is likely to be small. These units usually face input shortages. Sometimes these units also remain idle because of non-avaiability of spare parts and even face the absence of adequate repairing facilities. While fixed capital is seldom a problem, credit for working capital is often a serious handicap. (We do not exclude the possibility of the existence of some unscrupulous units with the sole intention of cornering scarce raw materials which carry premiums on them). We must, however, emphasise the need to overcome some of these bottlenecks with a view to fully utilising the scarce capital of such steps.

Employment Opportunities and constraints

For effecting a change in the occupational pattern in favour of industry and for creating more permanent employment opportunities, cottage and small-scale industries have an important role because of their ability to partly absorb the unskilled rural labour force. Also, as already indicated, the nature of rural unemployment is such that cottage and rural industries commend themselves for providing fuller employment to the underemployed and seasonally unemployed.

There are several constraints to the successful working of small units in rural areas. The first one concerns the quality of output and general lack of their acceptability to consumers. It is asserted that the rural market remains small, and that the urban consumer is highly selective. Therefore, for rural products to be acceptable (to urban consumers) it is essential to ensure their quality. We will argue that the quality aspect need not necessarily inhibit the sales of these products. First, our earlier premise of the rural market being small is suspect. Presently, more than 60 per cent of manufactured products cater to the urban consumer. Thus only 40 per cent or so is available to the nearly 80 per cent of the rural population. (Admittedly, it is not merely a question of availability but effective demand, too.).Also, at present, because of low level of rural incomes, nearly three quarters of rural household consumption is devoted to food, most of it being in unprocessed form. With increasing rural incomes the demand for manufactured and processed consumer goods will tend to rise. It is this 'market' which these cottage and small industries should attempt to serve. Moreover, it is our judgement that, in the short run, established manufacturers of quality products will not find it profitable to operate in rural areas, especially those with low population density, because of high overhead costs. The local authorities can also help these industries by patronising their products. The scheme of offering a common patent for some quality items could also be explored by local authorities. For example, washing soap with proven quality may be allowed to bear a trademark. In due course there is likelihood for these products to be readily acceptable both by urban and rural consumers. We also need to pay urgent attention to marketing from another viewpoint, namely, to tackle the problem of inventory build up. Khadi can be taken as an illustrative case. In 1977-78, the stocks of khadi were of the value of Rs. 483 million, while the production was Rs. 648 9 million and the sales were Rs. 665.2 million. This appears to be a continuing phenomenon since the inventory in 1976-77 was Rs. 458 2 million against a production of Rs. 519.7 million and sales of Rs. 560.3 million. This results in a heavy burden on the national reserves apart from blocking up scarce capital. From the viewpoint of small units, it dampens production since inventory build up not only reduces profitability but it also results in higher requirement of working capital. Unless this situation is remedied, not many units would find it possible to survive for long.

Marketing is just one bottleneck, although important. In the Indian context, raw material shortages pose a real problem to these small units. In our study on rural industries, we found that a large number of units shut down on account of either scarcity of raw materials or irregular supplies. The cottage industries by definition are on a tiny scale. The persons who run them are usually people with very limited financial standing. Any stoppage of work, for whatever reasons, is ruinous. For them to remain in business, they not only need a steady demand for their products, they must also be assured of regular turnover of production and timely payment. This implies a continuous supply of raw materials which is adequate for at least one shift a day for the major part of the working year. Obviously if this is not done, some units

11 DPD/79 6

would be forced to shut down, and persons so released would seek alternative job opportunities. Such a situation is dangerous and frustrating, and it is likely to dampen the interest of prospective entrepreneurs. Thus, in planning for rural industrial activities, we need not only to consider the appropriateness of the pattern of production in relation to the pattern of rural consumption but also to ensure a regular flow of raw materials for their production needs. This suggests a production pattern linked to the availability of raw materials and the same time and demand. It would certainly be a preferred situation if production were closely linked to locally available raw materials or to those raw materials which are not scarce and could easily be transported. It is our feeling that the entire arithmatic of X units with N employment potential per unit must stop in favour of realistic planning since it is not possible to generate X N employment without ensuring credit and raw material availability in response to sufficient demand. While we grant the need to urgently solve the problem of unemployment we must also emphasise the fact that we do not have unlimited resources. We should aim at setting up only such numbers of units as would not be starved of raw materials or credit. Such a step is imperative from another viewpoint as well. We might agree that after all people will not corner raw materials simply in order to hold them idle for ever; these raw materials will ultimately enter into production channels But in the meantime we are in a situation where some units are lying idle. This is a serious waste of national resources both in terms of idle machines and tools as well as of physical space which may have been appropriated from farm land.

Credit availability, especially for working capital, is another serious problem. A particular unit may have enough demand for its products but lack of sufficient funds for the purchase of raw materials may hinder production It should be possible to evolve an organisation which would provide credit speedily Stories of credit becoming available when it is least needed are too many to be recounted and, unfortunately, because of improper timing, loans are often misutilised, mainly for consumption purposes.

Simple Skills and Higher Technology

With regard to the question of what technique to adopt, we should mainly be guided by the time required to impart skills. It is not possible, at least to begin with, to impart complicated skills since it takes a long time. Thus, such production lines should be undertaken in the first instance which require simple skills and which can be imparted to the illiterate rural artisans in the shortest possible time. This calls for various Boards, namely, Khadi and Village Industries Commission and the All India Handicrafts Board, to reorient their production and training programmes. In this context it is in order to state that a policy with regard to the development of cottage industries should consciously adopt a policy of raising the technological level, since without it cottage industries have little future as they will find it difficult to keep pace with changing consumer tastes. The shoes which are, for example, acceptable today may not be acceptable in future because of changed designs, etc. The latter may require employment of higher technology This phenomenon is particularly relevant in a world where mass media determine to a large extent consumer tastes.

Thus, for the success of cottage industries, it is imperative that the production pattern is conceived in such a way that it takes into account the pattern of consumer demand, the size of the market, and the availability of both credit and raw materials. The production technique should take into account the unskilled nature of the rural masses and consumer tastes Inter alia a decision is also to be taken on the emphasis to be placed on the traditional and modern sectors.

Commitment to Rural Development

A final word about the administrative machinery to handle a programme of such a vast magnitude. India, at present, has an experienced bureaucracy to deal with agricultural development programmes and large and medium scale development programmes. We also have a competent administrative machinery to handle the problems of small scale industries in urban areas. Unfortunately this is not quite so when one considers cottage and small scale industries on a tiny scale, especially in rural areas So far our experience with the various agencies working at the village level is not entirely satisfactory. First, persons chosen to handle such programmes are not always sufficiently qualified for the job Further, they lack commitment to the cause of rural development. They do not always appreciate the significance of these industries in national development and do not give sufficient attention to the problems of these tiny entrepreneurs, presumably these problems are a bit too trivial to require their attention. The frustrations so caused do not remain confined to these persons; they permeats through the entire society. To deal with some of these problems, the Government has recently set up District Industries Centres in all the districts. It would be premature to pass any judgement on the working of these Centres so soon, although admittedly this is a step in the right direction. However, the success of such a step is largely dependent on the competence and commitment of the staff

(Continued on Page 86)

Role of Appropriate Technology

M. M. Hoda
Director (Communications)
Appropriate Technology Development Association
Lucknow

VOLUNTARY poverty as practised by saints, sages and wise men of the world is a noble thing indeed ! But enforced poverty in which a large number of people of the poor world are subject to live due to the wickedness of social systems, is one of the most degrading things. It does not allow people to fulfil their most elementary wants like food, clothing, shelter health and education. How can we combat this enforced poverty perpetrated on mankind ? While many ways have been suggested, like changing the social structure of the society and the pattern of economic management, technologies can also be important means through which poverty can be successfully eradicated. However, for this purpose, it should not be conventional run-of-the-mill technology which has given more power to the powerful persons and more riches to the already rich peple. The technology to achieve this objective should be appropriate to the situation of the poverty. It should be the role of appropriate science and technology to use modern knowledge to bring forth its human face for alleviating the hopeless condition of the poor people, viz., the unemployed, the landless labourer, the marginal farmer, the impecunious craftsman and artisan.

Gandhi and his devoted colleagues yearned to give a radical change of vision to modern science and had declared as early as in 1947 that any research institute which does not look to the interests of the 'daridranarayana' or the poorest man, is really a satan's workshop. In spite of this clarion call, modern science and technology, as practised in India, did not and do not care for the poorest. Much later, in the year 1960, Schumacher, following up the meassage of Gandhi, gave a call to the whole world to re-model the science and technology for the benefit of the teeming millions whom he described as 'survival artists'. The poor men he said, know how to survive without any money and have gone beyond the computation of Gross National Product (GNP) and per capita income Appropriate technology should look to the condition of the poorest of the people and cater to their needs which come as close as possible to the cost of survival or 'no-cost technology'.

Poverty and employment are the two sides of the same coin. The main cause of poverty is that people do not get enough *income* from their work. They are unable to keep their body and soul together. Poverty in the developing world has become synonymous with misery and degradation Technology is one of the important means through which employment can be created for the masses and productivity of their work can be so increased that it could raise their level of income and extract them from the jaws of poverty The conventional modern technologies are only for those who are already rich and powerful. For the poor people, we have to start from something which is inexpensive, small, simple and capital-saving. To achieve this objective, we need certain machines, tools, processes and organisation, which taken together, constitutes technology Appropriate technology does not mean only the hardware in its narrow sense, viz. machines, equipment, plants, tools etc but also includes software like preparational surveys, feasibility studies, arrangement for raw materials, transport setting up infrastructure for arranging funds, management and marketing. The appropriate technology which is exclusively for the poor should, therefore, concentrate on the following to achieve its objective :—

1. Preparation of priority of goods which should be manufactured and produced in poor man's sector ;
2. The cost of the equipment and machinery per work-place should be between Rs. 2,000 an

5,000 rather than between Rs. 50,000 and one lakh;

3. It should be small and simple which could be understood, handled and managed and maintained by common man, like bicycle and handpump ;

4. It should be able to improve the quality of products and increase the efficiency and productivity of the worker.

Agriculture and food production

Since agriculture relates to production of food which s the most important thing for survival after air and vater, it should take the pride of place in the list of onsumer items. Agriculture is also, by far, the largest mployer in the country at present. Appropriate technology should, therefore, manipulate agriculture in uch a way that it could benefit the poorest of the eople as well.

During the last two decades, importance has been iven to a sophisticated agricultural technology through which the "green revolution" has been achieved. It has ot helped the marginal farmers but the wealthy nes instead. There is no doubt about the fact that gricultural technology which depends on highly capital-intensive equipment like tractors, combined harvesers run with diesel oil, special varieties of seeds, high ose of chemical fertilisers and intensive use of pestiides, and irrigation water can be used only by rich armers who become more and more wealthy. The narginal farmers who are unable to pay for this high echnology, fall by the wayside in competition with heir rich and powerful neighbours. The resources sed for this technology also drain out the wealth of he rural poor to the urban areas.

The appropriate technology for agriculture will make use of the local resources like animal power and nimal-drawn equipments, organic and green manures, olar and wind energy to produce maximum agricultural goods.

There are various processes in agriculture and cultiation, viz., (a) seed-bed preparation (b) irrigation) sowing (d) weeding and interculture (e) harvestg (f) processing (g) storage and (h) transport. he most suitable technologies for the situation of overty for each of these items should be devised in ich a way that agricultural labour is not displaced but tilised to the maximum getting a higher income and eturn for their work. Some of the processes like sowing and harvesting which make a peak demand on labour, could be replaced by a simple animal-drawn newly innovated equipment to relieve the monotony and drudgery of labour and yet carry out these important functions with maximum speed and efficiency. Much attention needs also to be given on processing of grains. It appears that the work of grain-processing like rice-milling, wheat-grinding and extraction of oil has almost left the villages depriving a large number of poor people of their employment and livelihood. This also robs the farmer-producer of a higher income as he is obliged to sell his product in unprocessed condition which fetches a much lower price. There is a need for developing appropriate technology for processing of agriculture in such a way that they can be rehabilitated in the rural areas and made economically viable Mini-rice mills have been designed on this basis which can take care of the paddy production of a village and this provides higher income to the producer as well as creates avenues of employment without, in any way, sacrificing the quality of the product or efficiency of production

Similarly, as far as irrigation is concerned, large dams planned and constructed by the Government have inundated large forest areas, beautiful tea gardens and have displaced a large number of people from their ancient homes They bring in monster machines like bulldozers, earth-moving equipment and workers imported from outside. Obviously, the local people do not view this process with any degree of friendliness and they become very hostile to it. If small irrigation dams on the rivers are built in the villages with the help of the local people, they would always blend with the environment to be loved by the poor people who have participated in the construction of the whole system and can take advantage out of it The present controversy of making a large dam in the Silent Valley of Kerala is a pointer to this method of working.

Power and energy

For centuries, our whole agricultural system was based on cow and progenies of cow. Cow is a sacred animal for India which provides people with elixir of life. The bullocks, the offsprings of the cows, have been used as draught animals in agriculture. Both bullocks and cows give dung which is a source of manure for the soil. With the help of new technology, dung can also be used for generating methane gas as a bye-product and can work as a source of fuel and working engines. If our animal power is developed properly, we can get more milk, more power, more fuel, more organic manure. The supplementary power needed could be provided by the use of wind mills which have been sadly neglected in India for a long time. Simi-

arly, another source of free energy, i.e., solar energy, ;an be used for cooking, drying and various other purposes if properly designed by our scientists and engineers.

Industry

Although agriculture is the main source of employment in the rural areas, it is not possible to sustain very much increased population of our country on agriculture alone and, therefore, alternative sources of employment have to be found to absorb usefully a large number of people who cannot find employment in agriculture. It is a matter of great concern and regret that the percentage of the village artisans has dropped from 18 in the year 1910 to 7 in the year 1971. It means that a large number of professions and industries which sustained the rural population have disappeared from the rural scene shifting to the urban areas and using large-scale method of production. There is a need for bringing these industries back to the villages and re-habilitating them with higher income and productivity. In addifion to that, new products and consumer goods will have to be produced in the rural areas and an appropriate technology has to be designed

There is a wide variety of products ranging from supersonic aircraft and locomotives to pins and needles. A judicious selection of products from the list of new and old consumer goods will have to be made which can be produced efficiently and economically in the rural areas. The main question to be asked in this connection is what is being produced, who is producing it, and where it is being produced? The obvious answer from the situation of poverty, is that the goods being produced should not be for the tiny majority of affluent people, rather for mass consumption. The people producing these goods should be the poor people who are living mostly in rural areas at present below starvation level. The obvious place where these should be produced is the rural area which has been deprived of its production activities for the last half a century or so.

The main problem will be whether a large enough market can be found for these products if they are produced on a large scale in the villages. For example, at present, only 5 per cent to 10 per cent of the population consumes white granulated sugar; everybody else use only gur. If white granulated sugar were refined on a very large scale, would it be possible to sell it? This is to ignore the fact that it may not be desirable for such a large population to eat white crystal sugar for their general health. Similarly, tooth paste sells well, but if produced on a large scale in the villages, could it find an easy market ? If manufacture was started on such a large scale, would it not be responsible for increased incidence of dental caries? The rural alternative to the tooth paste is a twig of neem (datwan), but these twigs do not give a substantial return to those who sell them Thus, it has to be decided what products should be selected for village industries, bearing in mind that they should give a substantial return to the producers and should also promote healthy consuming habits based on natural needs and not on artificially stimulated needs. This fact calls for a shift in life style away from that promoted by the western industrial civilisation.

There cannot be any doubt about some of the items, notably clothing, as this is the next most important item after food. It may be difficult to fix a third priority and we have to choose from products such as house-building materials (not an item of regular consumption) and foot-wear (not worn by the poor, although derived from an important raw material, i.e. hides and skins of dead or slaughtered animals). As far as the food industry is concerned, agricultural processing, milk products based on animal husbandry, vegetable oils, poultry, etc , can be mentioned. No one can dispute that these products will create healthy consuming habits in the population and may give a higher income to the people who produce them, if an appropriate technology is developed for them. A range of other consumer products could be listed with their importance varying according to the local conditions and requirements, viz., wool products, jute goods, bullockcarts and other transport items (based on the age-old skill of carpenters), agricultural implements (based on the blacksmiths' traditional art), and pottery (based on the potters' ancient skill). Paper, sugar and cement are important consumer items of the present times which are manufactured on a large scale.

Technique of production

Once the products, according to our altruistic ideas and natural wants have been selected, the next most important step is to determine the technique and technology of production. Our basic aim and objective is to bring the industries and production activities in the rural areas to employ a large number of poor and impoverished people. The technique which is used for large scale production would not be appropriate or suitable for this purpose. It needs research and development on a very large scale to determine the production technology for each and every item; the two most important criteria being that the product should be comparable in cost and quality to the mass-produced product of the large industries. It is true that in the beginning, it will

require some protection as far as taxes and excise duties are concerned. There is also a natural advantage that if produced in the rural areas for the local market, it saves cost in overhead management and in transport.

Appropriate technology should be able to supply the whole package of industrial production as a modern industry offers. For this, organised and systematic work is needed for developing and designing appropriate technologies in the following five areas :—

(1) Scaling down of large-scale industrial production like sugar, spinning, paper, cement, soap and matches ;

(2) Upgrading of existing village crafts and industries like weaving, shoe-making, carpentry, blacksmithy, vegetable oil-extraction, pottery, leather and shoe-making and grain-processing, etc. ;

(3) Developing decentralised sources of energy like solar, wind, low-volume low-head hydel power, bio-gas, low-temperature wood carbonisation, etc. ;

(4) Developing new processes and products like forest-based industries, utilisation of paddy husk, bran, agricultural wastes, etc.

(5) Arranging physical amenities in rural houses, like housing, sanitation, health, education and culture.

But whenever a technology for poor people is being developed, their needs, conditions and situations have always to be kept in mind For instance, if we have to provide housing with reasonable comforts for 85 per cent of the people mostly living in the villages or in shanty towns, we must use a technology which is based on mud bricks, bamboos, thatch, straw and locally available timber and other materials. The technology of house-building which depends on cement, glass, steel and pile drivers, huge cranes and earth-moving equipments, presupposes that houses could be provided only for 5 per cent of the population The latter technology is an inappropriate technology and [illegible] is the most appropriate technology for [illegible]tion of poverty. Similarly, as regards, [illegible] methodology for providing credit facilities and loans to the poorest of the people for small investment for buying bullocks, implements, tools and equipment, fertilisers, seeds, etc., should not be based on the modern banking system even if they are renamed as 'rural banks'. By their very nature, modern banks are equipped to give loans of Rs. 1,000 to 100 people rather than giving loans of Rs. 100 to 1000 people. Due to high overhead cost, i.e. high-salaried staff, expensive building, furniture and fixtures, the cost of recovery from the poor people for small sums would become highly prohibitive. Thus, a new methodology for giving loans to poor people in the rural areas shall have to be devised so that they are freed from the exploitation of the traditional moneylenders and are also able to get loans at reasonable rates whenever they require. This would be the surest way of freeing poor people from rural indebtedness instead of enacting legislation.

We have seen from the history of the last 100 years that modern technology has ensured prosperity for those who are already rich and powerful. This kind of technology is capital-intensive, largescale, labour saving complicated and complex requiring a large infrastructure and high degree of training and skill. For an assult on poverty, we must have a technology which is more labour-intensive, capital-saving, small and simple. Technologies which ravage the environment, create pollution on a large scale, which are consumption and waste-oriented are highly inappropriate and anti-people. The people must use all the resources they have for their own benefit and develop community self-reliance.

This will also be the surest way of achieving socialism and equality It is very difficult to share affluence of automobiles, television, air-ocnditioners and glass and concrete houses with everyone. If the people make their needs more humble and choose the method of voluntary poverty only to satisfy their natural wants it is much easier to achieve socialism and equality without creating problems of pollution, congestion of traffic depletion of resources and exploitation. ☐

While developing technology for poor people, their needs, conditions and situations have always to be kept in mind.

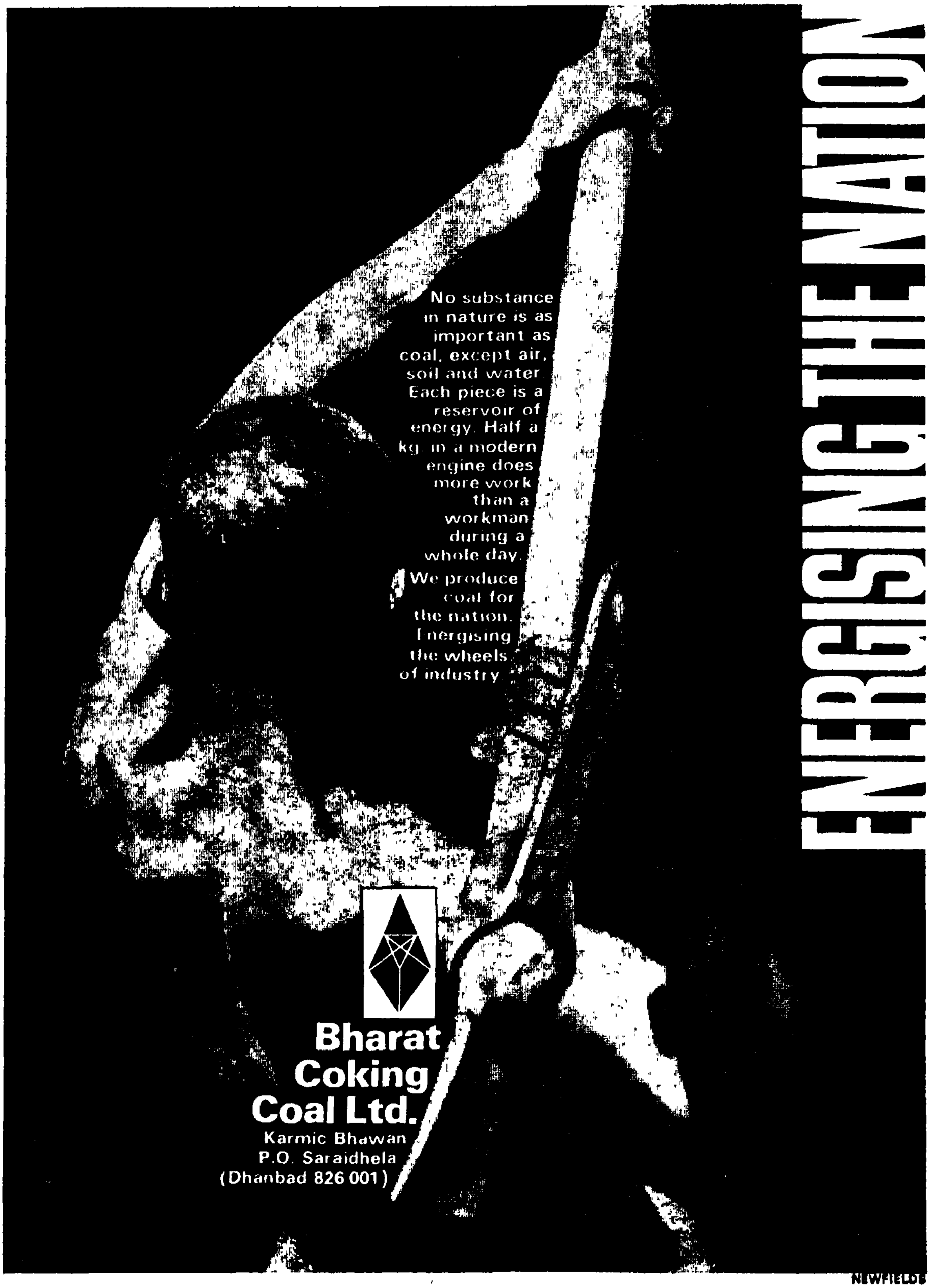


Poverty : Causes and Cure

B. K. Madan
Chairman
Management Development Institute
New Delhi

DURING the first three Plan periods—through the fifties and upto the mid sixties, the attentions of planners and economic leaders of India as of other under-developed countries in the first flush of independence from colonial rule, were fixed on giving a push to the economy and shaking it out of the centuries' old somnolence of stagnation. India as well as other developing countries succeeded well on the whole in imparting a growth rate to the economy not only larger than ever before but equalling that achieved by developed countries in general.

In India the ebullient optimism of this first planning phase was hit by the severe droughts of the mid sixties (and early seventies) and shock waves of the little wars with Pakistan following the border bout with China, and the consequent dislocation of the economy led to a plan holiday or planning siesta during 1966—69. This led to some intense heart-searching and introspection for taking of the achievements and failures of planning. It brought the grim realisation that the benefits of growth had not reached down to the masses of the poor and poorest parts, comprising


ENERGISING THE NATION
No substance in nature is as important as coal, except air, soil and water. Each piece is a reservoir of energy. Half a kg. in a modern engine does more work than a workman during a whole day.
We produce coal for the nation. Energising the wheels of industry.
Bharat Coking Coal Ltd.
Karmic Bhawan
P.O. Saraidhela
(Dhanbad 826 001)
NEWFIELDS



The poor in India are more under-employed than unemployed

as large as two-fifths to one-half, of the population, who had experienced little if any improvement in their economic condition

Though a decline had probably occurred in the proportion of the population classed as absolutely poor, owing to the high rate of population growth, there had been no decline and if anything an increase in the numbers of the very poor. Generally, over the last thirty years the chronic ailment of abject poverty, with serious under-employment and unemployment of the swelling labour force, has continued to grip the economy even as it has progressed at fair rates in gross national product and per capita national income, with a broadened industrial and technological base, and latterly with comfortable food and foreign exchange reserves fed by a new thrust in exports, including the human stream.

The failure on the anti-poverty front has thus been thrown into bold relief and the need for an in-depth analysis of the problem of poverty with a view to understanding its nature and causes and methods of cure, has come into sharper focus.

Absolute & Relative Poverty

Poverty may be regarded in absolute or relative terms It may be viewed absolutely as sheer deprivation or want-stark or naked, or as non-fulfilment of bare minimum needs of existence-of food, shelter, health and education, and therefore as a synonym for hunger, disease, ignorance and squalor in living conditions Viewed relatively, poverty is the contract between the sub-subsistence living of the many and the affluence of the few. It is thus reflected in the range and spectrum of living standards and styles or their lack, and in the economic distortion, dissension and despair that flow from the inequalities in income and wealth. It may be measured in terms of the full dispersion between the highest and lowest standards or by the shortfall below the average standard of the abysmally low standards of the poorer and poorest. This is not the place to enter upon a discussion of the techniques of measurement of poverty. The fact remains that poverty is pervasive, deep and endemic, and if in relative terms its edge has worn out in relation to some of the poor in the organised and urban sector, its sway is unabated generally and it grinds much the same, in absolute as well as relative terms.

In its extreme manifestation poverty is largely a rural phenomenon, with the predominance of depen-

dence of the labour force on agricultural and rural occupations and with its incidence concentrated among landless labour, small and marginal farmers, artisan and cottage workers, and partly in the informal urban services sector. While unemployment is an obvious source of poverty, the most common cause of poverty in the country is underemployment or employment which yields less than a bare pittance, for the agricultural and rural workers, especially during the off-season for agricultural operations, and particularly during periods of drought or other adverse turn in the agricultural seasons. The poor of the country are thus more under-employed than unemployed, and the worst poverty afflicts the large classes of the self-employed in an economy where self-employment rather than wage employment is the rule. Even the resourceless landless labourer employed by no one in particular might enjoy the dubious privilege of being self-employed !



The hands which can generate wealth lying idle for want of work.

Causes of Poverty

Any discussion of the causes of poverty in India cannot omit mention of what might at this stage be reckoned as remote sources of poverty but which still remain relevant and significant among origins of poverty. (a) Among these is the long era of colonial rule which ruthlessly and systematically destroyed the basis of sound, efficient, productive arts and crafts and small-scale industry in the country through highly discriminating fiscal policies which in the result 'uprooted, over the whole surface of Hindustan, the union between agricultural and manufacturing industry.' (b) Besides, the Economic Drain of Dadabhai Naoroji, it was more than a mere theory and, indeed, described a process which emasculated the country's economy by draining away the red blood corpuscles of its savings to an extent for which the recent trickle of foreign economic aid is but a paltry recompense. (c) The system—largely a heritage, again, of the colonial era has been conducive to progressive proletarianisation of labour and to low agricultural productivity. (d) But the low productivity of agriculture and of the remnants of rural occupations after virtual annihilation of the industrial crafts was further impaired by the rapid growth of population especially after independence and during the period of planned development (the net growth rate increased from 1.25 per cent during the first plan period to 2.4 per cent during the fourth plan and after, and has slowed down to 2.2 per cent currently). This accentuated fragmentation of the pitiably small holdings made cultivation more inefficient and uneconomic. (e) Generally, lapses in the management of the economy and failure to provide for effective financing of economic development which with inadequate control of large unprodctive public expenditure and attendant massive defic financing contributed to inflation and concentration incomes and wealth and worsened the plight of t poor. (f) With the Government's committment take all measures to improve the levels of living the masses, since independence there has been no la of plans, projects and programmes to reduce and r lieve poverty, whether it be land reforms or rural publ works for providing additional employment, or rur debt reduction, or extension of facilities for credit a marketing for the products of agriculture and sma industry, or assistance to the small and margin farmer especially in drought-prone areas, or develo ment of schemes of cooperation among small pro ducers and workers. But the impact of the vario efforts and approaches has been limited mainly t lapses and lags in implementation of the program mes, owing atleast partly to the in-built hurdles i execution in a socio-economic structure which ha been resistant to too rapid a pace in lessening econom inequality, and has tended to intercept the benefi of measures in aid of the poor, for the better-o economic classes themselves, especially in the countr side.

Measures against Poverty

Against the above background, with all the advan tage of hindsight, what are the directions and line of attack on poverty, so as to eliminate atleast it

worst forms within, say, a decade and eradicate it by about the century's end? Any nearer targets, though more alluring, might be self-deceiving.

First and foremost, the objective of eradication of poverty must be integrated with the goals of planned development, and acknowledged as its central and prime aim. This too must be recognised that attainment of this objective entails a continuing, relentless war, a series of arduous battles, against what is at once a scourge and malaise.

If follows that reasonable political stability and ...tional concensus with continuance at the Centre and the States who are willing to adhere to the main ...ements of the programme for eradication of poverty, ...l-be-it with flexibility in its design and strategy, are a ...ne qua non of victory in the struggle against poverty.

It is sometimes argued that it is not possible to make ...ny headway against poverty with the present mixed ...r mixed-up economy system, though it is possible ...o deal with poverty under either the pure capitalist or ...ocialist pattern of the economy. It must be stated, how...ver, that the conquest of poverty is perfectly feasible ...ithin the framework of a polity based as at present on a ...emocratic set-up combining features of the capitalist ...nd socialist systems. The assumption of a basic change ...n the political framework is, at any rate, a counsel ...f despair. Also, the capitalist assumption posits attain...ment of a growth rate of the economy, if it is to ...ercolate to the lower reaches of the economy in...abited by the poor, of an order and for a period that ...re beyond the practical range of achievement.

Action Programme against Poverty

As regards the action programme against poverty, ...he steady pursuit of economic growth must remain its ...heet anchor. Economic growth in developed coun...ries is known to have worsened economic inequality-...and therefore relative poverty-over an initial period ...and promoted equality thereafter. But the evidence ...of economic development in ...eveloping countries ...during the last quarter century—inadequate as it is—...does not support the assumption that economic growth ...hinders alleviation of poverty. Indeed, economic development furnishes the main sinews to the state by way of resources for investment in programmes and projects to aid the poor. Besides, for the long term, a reduction in the *proportion* of population dependent on agricultural and other primary occupations with a corresponding increase in the industrial and tertiary sectors of the economy is a tested and proved strategy for improving average living standards ...lated to the general development of ...

Though economic development, improvement in living standards and spread of education, *especially* woman education, have been the best decelerators of population increase, the serious threat posed by the population explosion to the already despicably low living standards—the birth rate is observed to be higher among the poorer people—suggests the urgency of stepping up the tempo of the campaign for family planning.

For reducing poverty it is necessary to aim at better distribution of the benefits of growth by broadening the base of the productive process itself through providing the widest possible opportunities to the poor for participation in production, rather than relying on redistribution of income and wealth *after* production through fiscal transfers and welfare measures.

The point has been made that the composition of the GNP is weighted in favour of the 'wants of the few' and against 'the needs of the many' so as to make for shortages and high prices of essential articles of mass consumption at the same time as the demands of the relatively rich for luxury and semi-luxury articles are more readily and cheaply met, with over-capacity put up through over-investment for them. While there is scope for allocating and re-directing more resources for producing more necessary goods of mass consumption, it is important simultaneously to reinforce buying power for such goods through use of the productive system itself to generate more demand for them. Experimentation with successive standard cloth schemes should be enough warning about the need for more imagination in choice of goods for deliberate measures to increase production and supplies; the weight of subsidies on the economy is already heavy.

The general development of the economy and of industry and consequent reduction in dependence on agriculture are slow processes; the ability of large-scale industry and the organised sector to provide additional employment is also poor. The predominant numbers of the poor, again, being rural and agricultural, it will remain necessary, for quite some time, in order to improve the lot of the poor and very poor to focus measures on improving agriculture and agricultural production, which can provide vast opportunities for more employment and better employment resulting into additional incomes for the poor as well as increase in supplies of goods and articles. This would finally improve the levels of living of the poor in real terms.

To make a visible impact on the real levels of living of the poor it is necessary to push ahead with measures impinging on the structure and organisation of agriculture directed to increasing the intensity and improving the efficiency of cultivation with more inputs, increased yields and greater output. The strutural aspects of needed agricultural change include more earnest implementation of land reform measures, more vigorous consolidation of fragmented holdings and strengthening of the institutional framework for reinforcing the position of small and marginal farmers regarding their access to essential inputs and facilities, e.g. water, fertilisers, pesticides, credit and markets based on recognition of the viability and high relevance for relieving poverty of successful, small-scale agriculture. The current trend of Governmental policy in this direction is thus very appropriate as is the redoubled stress on development of occupations ancillary and subsidiary to agriculture e.g. poultry farming, dairying and animal husbandry, forestry, fisheries, bee-keeping etc.

The building up of productive assets in the countryside affords considerable opportunities for additional work and employment in works such as minor irrigation and irrigation channels, bunding and terracing, land reclamation, soil conservation, link roads, community facilities, schools, hospitals etc, besides rural housing, the designs for which have increasingly to be innovative and simpler and based on utilisation of local materials and resources These activities have thus to be strongly supported by local R & D directed to enhancing the employment-generation and effectiveness of contribution of rural infra-structure and rural public and community works to an increase of national income and wealth.

In general, for durable improvement in conditions of the poor creation of productive work opportunities and employment for building up income-generating assets, for which the beneficiaries might also be willing to make a contribution, is much more promising of results than employment in projects of the make-work type.

Recent years have witnessed a spate of schemes for betterment of the lot of the very poor and under-privileged. Notable among these have been the employment guarantee scheme of Maharashtra and the Antyodya scheme of Rajasthan and other States. The latter schemes have deservedly received much notice perhaps less for the results already achieved, which are provisional, than for their potentiality for widen application under proper conditions and execution. There is a good deal of room for new initiatives, including by voluntary agencies for rural development. As in industry, the concept of autonomously growing, cumulative process of development, starting from small beginnings, is relevant, and the combined operation of science and technology and local R&D should be directed to developing techniques of making integrated impact of various services, facilities and activities toward rural development for combating poverty.

Various types of approaches to rural development-of the package and comprehensive kinds, *more* or *less* intensive or extensive in operation, have been experimented with. With the wide diversity in environment for rural development, there is room for different approaches. In all of them, however, it is vital for achieving permanent results, to ensure the participation and involvement of the local people, including in particular the poor themselves.

There remains the problem of effective administration and organisation of the programmes for the poor, alike of designing projects with a view to a specialised impact and of building in methods and procedures of operation, and enlisting resources of leadership, commitment and dedication, so as to maximise the contribution of programmes to rural development for relief of rural poverty. There may often be no quick or short cuts to the destination, which lies through difficult terrain.

Coincidently with intensified interest in agricult there has been a welcome shift in policy toward sm industry, including the cottage and handicraft ty of industries, which are to be developed in a big w Small and large industries are often viewed as alter tive, competitive approaches, both for income and e ployment generation And so they are, in part. T competitive aspect keeps the two sectors on edge a guards their efficiency. Equally important, howev is their complementarity, each sector having its con bution to make meeting mass consumer demands the best way, and both having a role to play in ec nomic development and growth for keeping poverty bay.

Summing up

The incidence of poverty is heavily concentra in the country-side and in its extreme and absol form poverty is largely a rural phenomen Its solution calls for both the general remedy of acc lerated economic development and various spec

Contd. on Page

Role of Commercial Banks in the Draft Plan 1978–83

D. R Gupta
Adviser, Monetary Policy & Development, Planning Commission

THE DRAFT Plan 1978—83 was placed before the country after it was considered by the National Development Council about a year ago. Since then several aspects of the draft plan have been extensively commented upon by eminent economists, social scientists, captains of trade and industry, leaders of the trade unions and the press. However, the new role assigned to the banking sector in the successful implementation of the draft plan does not seem to have received the attention it deserves in the banking circles and in the industrial and business communities. This may perhaps be due to the reason that this has not been explicitly stated in the plan document. The author seeks to bring out the role of the banking sector, explicits as well as implicit in the draft plan, which it is expected to play in the fulfilment of the major goals and tasks set out in the plan and to dispel some misgivings that exist in this matter in certain circles.

THE PLAN objectives priorities and the policy measures designed to implement them are now quite known. However, it would be necess- ary to state them briefly in order to have pro- er appreciation of the role the commercial banks ay play for the success of the Plan. The principal bjectives of planning as defined in the draft Plan are achieve within a period of 10 years (1) the removal unemployment and significant under-employment 2) appreciable rise in the standard of living of the oorest sections of the community and (3) the pro- sion by the State of some of the basic needs of the ople in these income groups, like—drinking water, lult literacy, elementary education, health care, ral roads, rural housing for the landless and mini- um services for the urban slums These primary ob- tives are sought to be achieved while attaing a higher owth rate of the economy than in the past, moving wards significant reduction in the present disparties incomes and wealth and ensuring country's sustained progress towards self-reliance The employment oriented growth strategy is to be secured through giving primacy to agricultural development. After agriculture household and small industries producing consumer goods of mass consumption which constitute great potential for employment have been accorded the highest priority in Plan allocations Considerable stress has been laid on securing integrated rural development through area planning and building up rural infrastructure like roads, electricity, marketing centres, storage facilities, etc. and provision of minimum needs mentioned above. The new Plan favours only such heavy industries as would assist and support the accelerated development of agriculture and small scale industries.

The total resources in both the public and private sectors in the period 1978-83 are estimated at Rs. 1,16,240 crore of which total resources for the public sector Plan have been placed at Rs. 69,380 crore or about 60 per cent of the estimated resources. This would leave about Rs. 47,000 crore available for investment in the private sector. The latter will include a part of addition to inventories of the public

e views expressed in this paper are of the author, and not the Organisation to which he belongs. This paper deals inly with Scheduled Commercial Banks which account for per cent of the aggregate deposits of all the Commercial nks.

1 DPD/79-8



sector enterprises which are financed by financial institutions (mainly banking sector) The scheme of financing the Plan does not include any provision for augmenting the buffer stock by the public agencies on the assumption that bank credit will continue to be available in the coming years for this purpose The share in the resources allocation for high priority sectors like agriculture, irrigation, village and small industries is proposed to be increased from 22 9 per cent in the Fifth Plan to 28 3 per cent under the Draft Plan. The public sector outlay for rural development is estimated at 43 1 per cent during the Plan period as against about 37 per cent in the Fifth Plan 1974-79. It has not been possible to increase further the share in the total resources allocation for rural development on account of the need for larger investments in the urban areas to provide necessary inputs for rural development like steel, cement, electric power, agricultural machinery, etc

Before outlining the role of the commercial banks as visualised in the draft Plan it may be relevant to take stock of the achievements recorded by the banking industry particularly after nationalisation of the major scheduled banks in 1969 The major commercial banks have made tremendous progress during the last 10 years in several directions This has witnessed the rapid expansion of bank branches in the un-banked and under-banked areas particularly in the rural areas. The number of branches in the rural areas increased from 1860 in June, 1969 to 11802 in June, 1978 and in semi-urban areas from 3344 to 7586 and accounted for about 50 per cent and 22 per cent of the total number of 19695 new bank offices opened since June 1969. A substantial increase has also been made in the advance of the scheduled commercial banks to 'priority sectors'— agriculture, small scale industries and others including road and transport operatiors, retail trade, small business men and the self-employed between June 1969 and June 1979 (Table No. 1.)

The credit from scheduled commercial banks to the priority sectors increased 8-9 fold during this period or at an annual average growth rate of 27 per cent. The advances of the public sector banks to the priority sectors which accounted for about 14 9 per cent of their aggregate advances in June, 1969 rose to 30 per cent by June, 1978. There is of course a wide variation among individual banks in respect of the share of priority sectors lending to the total advances. The commercial banks particularly the public sector banks have been implementing various schemes under which bank finance is provided to weaker section of the community namely artisans, marginal/small farmers, landless labourers, members of the scheduled castes and tribes, allottees of surplus land, the released bonded labour and to weavers and so on. The differential rate of interest scheme which was introduced in 1972 with a view to provide financial assistance at concessional rate (4 per cent) to the weaker section of the community was extended to the entire country in 1977 The number of borrowal accounts in March 1978, was 14.42 lakh as compared to only 26202 in December 1972 The outstanding advances have increased from Rs. 87 3 lakh to Rs 71 crore during the same period. Since last year the lending policies of the commercial banks have been oriented to enlarge the

Table—1

Advances of Scheduled Commercial Banks/Public Sector Banks to agriculture and other neglected Sectors

(Rs. Crore)

	End of June 1969	End of June 1978	Annual average to growth rate	percentage share of agregate advances at June, 1978
1 Agriculture	188	1694	27 7	10.6
	(162)	(1657)	(29.4)	(12.6)
2. Small Scale Industries	286	1740	22.2	11.1
	(251)	(1641)	(23 2)	(12 4)
3. Others	30	822	44.4	5.3
	(28)	(694)	(43.0)	(5.2)
TOTAL	504	4256	26 8	27.0
	(441)	(3992)	(27.9)	(30.2

Figures in brackets relate to pubiic sector banks

y of credit to the neglected/priority sectors. The serve Bank has advised the public sector banks that advances to these sectors should account for 33.3 cent of the aggregate advances by March 1979. In er to extend credit facilities to small borrower in ru- areas these banks have also been advised to achieve redit deposit ratio of at least 60 per cent by March, 79 in the rural and semi-urban branches separately December, 1977, the Reserve Bank also advised the nmercial banks to relax and enlarge their credit relopment for agriculture and small industry. An ovative scheme—'Small Farmers' Window' has also n introduced with a view to providing incentive to nks to increase their lendings to the small farmers. ther for promoting investment in agricultural sector, nks have been required to charge the rate of in- est not exceeding 10.5 per cent on term loans with naturity of three years or more given to farmers for purpose of minor irrigation and land development order to stimulate capital investment in the small le sector public banks were also asked to charge a e of interest not exceeding 11 per cent on terms ns with maturity of not less than three years to cer- n specified small scale units With a view to remov- regional imbalances as well as to extend larger cre- to the small and marginal farmers and the weaker tions of the rural comunity, 48 regional rural banks l been set up by the end of June 1978 Their total n advances amounted to Rs 72.73 crore in June, 78, of which small/marginal farmers and landless ourers accounted for Rs. 45.41 crore Thus, the e of the commercial banks in extending credit to agriculture as well as small scale industry and all borrowers has substantially increased during the iod 1969 to 1978.

After the meeting of the Prime Minister with the ief Executives of the commercial banks in October 78, commercial banks have been advised to take ther measures to provide larger credit to the prio- y sectors and weaker sections of the community is includes special efforts in providing agricultural dit in 2000 blocks selected for intensive rural deve- ment, increasing the level of advance under DIR eme to one per cent of the total advances with a nimum of 40 per cent to scheduled castes and sched- d tribes and in extending credit to atleast two ad- ional borrowers per branch per month

However, the scheduled commercial banks would ve to play a much larger and a more dynamic role achieving the basic objectives of the new Plan and oviding effective institutional credit support for the ious production programmes and schemes included the Five Year Plan 1978—83 for increasing pro- ductivity and generation of employment opportunities on a massive scale particularly in rural areas.

What is the extended role envisaged in the draft Plan for the commercial banks ? This consists of (i) mobilisation of deposits on a much larger scale by tapping the savings both of the urban and rural com- munity (ii) provision of larger resources for finan- cing the public sector Plan (iii) increasing the share of the priority sectors and the weaker sections of the community in the total advances in the next five year period (iv) deployment of bank credit budget/Plan so as to conform not only to Plan priorities but also to make available larger credit for priority sector's productive and essential purposes and also help in main- taining price stability.

Of the aggregate resources for the five year period estimated at Rs. 1,16,240 crore the bank deposits, about 78 per cent of which are in the form of house- hold savings, account for as much as over Rs. 29,000 crore or about 30 per cent of the total resources. De- posits of the commercial banks have registered a phenomenal growth after the nationalisation of the major banks in 1969 The growth rate during the period 1969-70 to 1977-78 was 19.8 per cent (de- mand Deposits 18 per cent and time deposits 21 per cent). Allowing for an abnormal growth in some of the years characterised by high inflation rates in the past, demand and time deposits of the scheduled banks have been projected to grow over the next five years 1978-83 at the rate of 15 per cent and 20 per cent per annum respectively. The aggregate in- crease in deposits of the scheduled banks on this basis is expected to be about Rs 29,000 crore during the five year period. It is assumed that commercial banks would continue their efforts to mobilise savings of the community in the form of bank deposits both from the urban and rural areas in the coming years The draft Plan also implicitly assumes appropriate in- terest rate structure so as to assist the commercial banks in attracting people's savings in the banks.

The net market borrowings of the Central and State Governments, their enterprises and local bodies over the Plan have been projected to be contributed by the commercial banks through statutory liquidity ratio to be maintained by them The draft Plan also stipu- lates that the existing ratio of banks' investment in Government and other approved securities to their total deposits may have to be progressively increased to finance larger Plan outlay in the public sector. Though the extent of this increase has not been ex-

plicitly stated in the draft Plan, the contribution of the commercial banks to market borrowings of the States, Central Governments and local bodies are based on the assumption that this will be increased gradually from 33 per cent in 1977-78 to 40 per cent during the period 1978—82. Reserve Bank has already increased the SLR to 34 per cent during the current year. The Union Finance Minister has introduced a Bill in the Parliament in December last seeking an amendment, inter-alia to the RBI Act 1935 so as to empower it to raise the SLR to 40 per cent.

It may, however, be relevant to note that draft Plan suggests that"......increase in this ratio should be reconciled with the need for funds for meeting the inventory requirements of public and private sector undertakings and for meeting other essential purposes." For this purpose the Plan document recommends that it would be necessary to undertake credit planning and regulate the flow of credit in consonance with the Plan priorities. Accordingly, a Sub-Group under the chairmanship of Dr. K S. Krishnaswamy, Deputy Governor, Reserve Bank has been appointed to prepare a credit plan for the five year period keeping in view the approach, strategy, priorities and growth profile of the draft Plan. The credit budget will be formulated within the framework of the overall monetary budget as recommended in the Draft Plan This is intended to ensure that the growth of money supply bears a reasonable relationship to the growth in real output of the economy with a view to maintain a regime of relative price stability The role of the Reserve Bank will be crucial in the implementation of the Credit Plan. This will, apart from issuing guidelines to the banking sector from time to time, involve introduction of information and monitring system to watch the progress in implementation and suggest suitable changes in the Credit Plan as and when necessary.

In formulating this credit budget certain aspects would need to be given special attention It would seem necessary that the share of priority sectors in the total credit is significantly stepped up from 28.5 per cent at the end of December, 1978 in order to implement the employment oriented strategy of the Plan. The target of 33.3 per cent fixed for end March 1979, may be progressively increased to between 37 to 40 per cent by the end of the year 1982-83. Further, according to the existing guidelines to commercial banks one third of the total bank credit has to be provided to priority sectors as a whole by the end of March 1979. Within this overall limit there is no definite target for individual priority sectors. e.g. agriculture, small scale industry, etc. In the context of new strategy of the Plan it would seem imperative to work out relative shares of each of these priority sectors as well as in respect of the weaker sections within the overall target of priority sectors as a whole to be achieved by 1982-83. These targets are not intended to be rigidly fixed but are designed to serve as a broad operational guide for the commercial banks.

Moreover in order to adequately meet the requirements of bank credit for the priority sectors at well as to meet the requirements of working capital for important sectors of economy like large and medium industries, exports, etc consistent with the investment and growth profile of the Plan it would be extremely important to make a judicious and optimum use of the lendable resources of the banks. This would imply a rigorous credit discipline and strict avoidance of bank credit for inessential and unproductive purposes and in particular for excessive accumulation of inventories for speculative gains. This would highlight the need for a more purposeful integration between physical and credit planning both at the micro and macro levels by the banking sector

While the rate of monetary expansion in the economy during the Plan period has not been explicitly stated in the document on the basis of various estimates and assumptions this is estimated at about eight per cent per annum The credit Plan and the order of credit expansion to the commercial sector should be in accordance with the overall monetary budget so as to avoid excessive expansion of bank credit to the commercial sector which might tend to create inflationary pressures in the economy.

There are a few important areas which require special attention of the bankers. The credit deposit ratio of scheduled commercial banks reveal considerable measure of disparities as between regions and States (data presented in Table 2 on next page). No doubt attempts were made by the commercial banks during the period 1969-77 to improve the credit deposit ratio in backward States whose per capita income is considerably below the national average, yet this continues to be significantly below the average for all States

Several factors have influenced the flow of bank credit to various regions and States namely the net work of the banking system, the nature and level of eco-

Table—2

State	Credit Deposit Ratio	
	1969	1977
Assam	42 4	45.5
Bihar	27 2	39.5
Madhya Pradesh	55.8	54.8
Orissa	19 5	57.5
Rajasthan	49.9	62.0
Uttar Pradesh	44.6	44 0
All States	72 2	72.2

nomic activity, the strength and coverage of the co-operative institutions, etc. At present there is no pre determined allocation as such of the bank credit among different States However, it would be extremly necessary that the credit operations of the commercial banks are suitably oriented so as to ensure a larger flow of bank resources to the backward States and thereby reduce the existing disparities in credit deposit ratio among States. If the credit ratio of 60 per cent fixed for the rural and semiurban branches is attained this might help in achieving this objective.

It may be noted that Central Government has been issuing guidelines to the financial institutions for allocations of resources in recent years. These guidelines inter-alia include a list of high priority industries to which preference is to be given by the financial institutions in channelising their resources as well as a negative list of industries which will not normally be eligible for financial assistance in view of their being of no priority or because adequate capacity has already been built up for them. It will be in the overall interest of the economy if the guidelines issued to the financial institutions are also followed by the nationalised banks in their term lending operations. It would also be necessary to ensure a coordination between the financial institutions like IDBI, IFCI and the term lending activities of the commercial banks with a view to ensuring a flow of scarce resources in priority industries.

The recovery of scheduled commercial banks' advances to agriculture (direct finance) indicates that the performance in this regard has not been satisfactory, this has ranged between 50 to 52 per cent between June 1973 and June 1977, and in some of the regions like North-Eastern Zone and the Eastern and Western Zones, it has been below 40 per cent. This implies locking up of lendable funds which could be recycled for productive purposes. It would therefore be extremely necessary for the commercial banks to take effective steps to identify the causes for such low level of recoveries in different regions and to take necessary remedial steps so as to bring about a substantial improvement in this regard.

Of late deep concern has been expressed in certain circles about the enlargement of the role of the banking industry in the planning and development process in the country. These apprehensions have emanated from the feeling that its participation in this process is being 'overdone'. The main criticisms advanced against the planning approach outlined above relate to two aspects—(a) raising the existing statutory liquidity ratio for financing the long term investment in the public sector, and (b) increasing substantially the share of priority sectors in the total advances of the commercial banks. It has been argued that banks' primary responsibility is to provide short-term working capital and if the statutory liquidity ratio to be maintained by the commercial banks is raised beyond a 'limit' this might mean financing of working capital needs through recourse to Reserve Bank which is deficit financing. The commercial banks' deposits should not be treated as public revenues and the commercial banks should not be pushed beyond a limit in an anxiety to enlarge the social purpose of the banking industry. Further, it has been stated that there may not be any significant change in the production structure in the coming decade and therefore while setting some of the targets for the banking industry e. g. increasing the share of priority sector lending to 40 per cent of the total, the structural limitation on the speed with which targets can be realised should not be overlooked.

Let us first consider the question of raising the statutory liquidity ratio from 33 per cent in 1977-78 to 40 per cent in 1982-83 as implicit in the draft Plan The need and possibility of commercial banks subscribing to the Government bonds for plan finance has been recognised by all but no indication has been given by the monetary experts and bankers as to what

would constitute a clear 'limit' to such a draft The Plan document as mentioned earlier clearly states that increase in statutory liquidity ratio would have to reconcile with the need for funds for meeting the inventory requirements of public and private sector undertakings and for meeting other essential purposes. A Sub-group under the Chairmanship of Dr. K. S. Krishnaswami has been requested by the Commission to formulate a credit Plan for the five year period 1978-83. It is hoped that its report would fully take into account the reasonable requirements of working capital for different sectors of the economy for the five year period.

If it is found that the banks are left with surplus funds after meeting the statutory obligations and essential requirements of working capital, should these be left with the banking system or immobilised by the Reserve Bank as is being done at present through compulsory impounding or should these be available for financing the higher level of investment in the public sector ? Even if it is conceded that commercial banks may have to approach the Reserve Bank for refinancing facility to meet their current requirements, it is now open for the Reserve Bank to provide this or not, according to its best judgement in this matter. In case such accommodation is not made available by the Reserve Bank the commercial banks and even the borrowers may have to make more efficient use of the funds already with them through quicker turnover and greater credit discipline. The reduction in the inventories in the public sector enterprises and the economy in the use of working capital has been one of the important factors in increasing their profitability in the last 2-3 years. The credit restraint, therefore, may not always have adverse impact on production and may even lead to more economic and rational use of scarce bank resources.

Whether the postulated increase in SLR is reasonable can be looked at from another angle. The proportion of the public sector Plan outlays financed through investment by the commercial banks in the Government and other approved securities ranged between 11.6 per cent to 24.8 per cent during the Fifth Plan period 1974-75 to 1977-78—yielding an average ratio of 16.6 per cent. According to the draft Plan estimates, the commercial banks are expected to contribute (over Rs 11,000 crore or) about 16 per cent of the public sector Plan outlay of Rs. 69,380 crore. Can this proportion be regarded as too ambitious and will this not leave adequate resources with the banks for meeting the working capital requirements, etc.

Total bank credit by the scheduled commercial banks to the commercial sector during the four year period 1974-75 to 1977-78 increased from about Rs. 7400 crore at the end of March, 1974 to Rs. 15000 crore at the end of March, 1978 i.e. by 19 per cent per annum. The non-food credit increased by 16.5 per cent per annum during this period as compared to growth rate of national income by 4.5 per cent per annum. A part of this increase could be attributed to the consequential effect of the rise in the prices. The deposits of the scheduled commercial banks are estimated to increase by about Rs. 28,200 crore during 1978-83 period. Assuming that—(i) statutory liquidity ratio to be maintained by them is progressively raised from 33 per cent in 1977-78 to 40 per cent in 1982-83 as implicit in the draft Plan ; (ii) the cash reserve ratio would continue to remain at 6 per cent ;and (iii) the requirements of bank credit for financing public sector food requirements will stabilise at around Rs. 2000 crore during the Plan period, a permissible level of credit expansion is estimated at about Rs 15000 crore during 1978-83 period. The average credit deposit ratio on this reckoning during 1978-83 period would be about 63 per cent as against 66 per cent estimated for 1978-79. The permissible level of credit expansion by the scheduled commercial banks would imply annual growth rate of non-food credit to the commercial sector by about 18 per cent as against the observed rate of expansion of 16.5 per cent during 1974-78 period. Can it be regarded as inadequate in relation to the trend in the past, and the postulated annual growth rate of national income of 4.7 per cent per annum (industry by 7 per cent, and of agriculture about 4 per cent) in the Plan period, particularly in view of the assumption of price stability ?

It is nobody's guess that Bank deposits should be treated like public revenues and should be drawn upon by the exchequer in order to meet the shortage of funds for lack of effort on the part of the Government for mobilisation of aditional resources. The draft Plan envisages the resource mobilisation effort of the order of Rs. 13000 crore during the Plan period as against over Rs. 11000 crore expected to be contributed by the commercial banks to finance public sector Plan. Even the above order of additional resource mobilisation on the top of massive dose of taxation undertaken in the Fifth Plan period, according to the judgement of some noted economists will not be feasible and might even prove inflationary. Should the target of additional resource mobilisation be raised further beyond Rs. 13,000 crore in order to keep the contribution of banks to public sector Plan to a 'limit' ? The major question for consideration is as to what are the alternative uses

of the additional funds with the banks and their net social benefit to the economy as a whole. In other words, if the contribution of the Scheduled Commercial Banks to the public sector Plan is reduced below the level envisaged in the draft Plan will the diversion of resources to the private sector be more beneficial to the economy ? These are some of the implications of the approach under discussion which need to be pondered over. What should therefore, be reasonable limit to such a draft and who should take decision in this matter ? Should it be the Central Monetary Authority or the Central Government on the advice of the Planning Commission which is responsible for assessing the aggregate resources of the economy including those of banking sector and for determining their allocation for the investment as between private and public sectors ?

Let us now consider the second point viz. increasing the commercial banks' share in the lending to priority sectors to around 40 per cent in the next Plan period. At the end of June, 1978 the share of lending to the priority sectors was 27 per cent of the total bank advances. In case of public sector banks this was even higher than 30 per cent private sector banks providing only 20 per cent of their total credit to the priority sectors. In some of the public sector banks the credit to priority areas has already exceeded the target of 33.3 per cent fixed for all the public sector banks by the end of March 1979 The bank credit to two most important constutuents of priority sectors—agriculture and small industry accounting for as much as 80 per cent of the total, increased from 13.9 per cent in 1969 to about 22 per cent in 1978. If the bank credit to the priority sectors has to go to about 40 per cent at the end of 1982-83, the share of agriculture and small industry would be roughly about 33 per cent or so as against about 22 per cent at present. The share of other elements in the priority sectors would increase from 5 per cent at present to 6-7 per cent in 1982-83. On these assumptions the bank credit to the priority sectors is estimated to grow at about 24 per cent per annum against the realised growth rate of about 27 per cent during 1969—78 period. The incremental credit ratio to priority sectors during the Plan period would work out to about 50 per cent against the observed credit ratio of 34.3 per cent during 1969—77 period and 53.8 per cent in 1977-78 in case of public sector banks. Of course the moot question is whether agriculture and small industry sector would be able to absorb the additional credit availability of this order. This would undoubtedly necessitate concerted measures by the banks in view of the policy shift outlined in the draft Plan. Another crucial question is whether development of larger [illegible] sectors would adversely affect the [illegible] for other sectors. Of the [illegible] credit of around Rs, 15000 crore to the [illegible] sector during the period 1978-83, the [illegible] would on the above basis claim [illegible] credit of about Rs. 7500-8000 crores. This [illegible] resources to the extent of over Rs. 7000 crores with the commercial banks for the credit need of the other sectors—such as large and medium industry, trade, etc. on the assumption that food credit will stabilise during the next five years at around Rs. 2000 crore reached in March, 1978. The non-food credit (other than priority sectors) is projected to increase at the annual rate of 12.8 per cent per anum which may not be regarded as inadequate keeping in view the projected industrial growth of about seven per cent and of the national income of 4.7 per cent. Thus keeping in view the trend in the past and the new priorities in the Plan, in our judgement, it would be desirable and should be possible to reach the target of around 40 per cent for the periority sector provided concerted measures are adopted by the public sector banks. At the same time some mechanism has to be found to induce the private banks to fall in line with the public sector banks. As mentioned earlier this may not be regarded as too rigid a target but is intended to serve as a broad directional guide to the banking industry. However, what is implied is that within the resources available every attempt will have to be made by the banking sector to provide maximum funds for the priority sectors, at the same time meeting the legitimate requirements of other sectors for productive purposes. This would also involve a rigorous credit discipline and eschewing of extending bank credit for inventory accumulation for speculative gains. The existing system of cash credit limits sanctioned to individual borrowers is hardly conducive to credit plannig and maintenance of price stability. This needs to be replaced by a more rational, functional and purposeful system.

Recently another related issue has been posed. Should the maintenance and augmentation of buffer stocks of essential commodities by public agencies be a legitimate charge on the banking sector or should these be financed out of the Plan or budgetary resources of the Government ? As mentioned earlier the public Sector Plan for 1978-83 does not include any provision for this purpose. If the public sector Plan has to meet this requirement it can be either through increased level of deficit financing or by eliminating some of the essential projects programmes or schemes already included therein. This would either mean pressure on the prices or a cut-back in the investment programme which will retard the rate of growth in the economy.

It is also a moot question whether financing of buffer stocks could be considered synonymous with long term investment for productive purposes. The buffer stock are basically intended to maintain conditions of price stability essential for a steady and accelerated growth of economy and are essentially in the nature of trading activity designed to facilitate even flow of supplies in the market. More over bank credit for these purposes might vary from time to time, and in periods of shortage may go to low levels. Further, once adequate level of buffer stocks are built up, the credit requirements would more or less be of revolving nature. The buffer stock of foodgrains for instance have already reached a plateau and there is not likely to be much additional demand on the bank resources in their case in the Five Year Plan period. Buffer stocking in respect of a few other commodities like cotton, edible oil, jute and sugar might have to be built up but the magnitude of bank credit required for this purpose may not be significant and may not exceed 25 per cent of the bank credit for the buffer stock of foodgrains. It should be possible for the banking sector to provide this order of bank credit out of incremental deposits in the next five years. Even if the same is treated in the nature of long-term investment, is not the commercial bank credit deployed for long term finance both to industry and agriculture ? In June 1976 over 14 per cent of the outstandings of the commercial bank advances were in terms of term credit to the various sectors of the economy. In view of these considerations, it would seem desirable that banking industry should continue to finance buffer stock operations in respect of essential commodities ; of course, as an integrated part of the credit budget.

The desirabitiy of the increase in the statutory liquidity ratio and the lending to the priority sectors has also been questioned on the ground that these would reduce the profitability of the banks and even might jeopardise their viability as the interest rate earned by them on Government securities is relatively low and part of credit to priority sectors is made available at concessional rate of interest by the banks. This should, however, not impose any insurmountable problem and could be tackled in several ways. Lending rates by the commercial banks to certain categories of borrowers in the non-priority sectors might be raised. Even the interest rate on the Government securities could be stepped up to some extent. If absolutely necessary, Government may consider the possibility of providing interest subsidy to the banks to enable them to lend to the priority sectors and the weaker sections of the comunity at the concessional rates of interest. Moreover, apart from improving substantially the productivity of the banking industry which has been emphasized by several eminent bankers, there is also urgent need for rationalising the emoluments structure in this sector, as banking industry now constitutes one of the important island of high wages in the economy mainly because of the highly favourable dearness allowance formula. Since major scheduled banks are public sector enterprises their D. A. formula need be rationalised and brought in a phased manner at par with that prevalent in the public sector enterprises as recommended by the Boothalingam Committee, or with that of the employees in the Central and State Governments. Also in view of the significant unemployment among the educated in the country fresh recruitment in the commercial banks could be made on emoluments comparable to that in the Government. Thus, while suitable steps may be taken to ensure reasonable level of profitability, their lending operations should nevertheless subserve the wider socio economic objectives set out in the national plan.

This brings us to another crucial question relating to the degree of involvement of the banking industry in the process of planning. In order to make the optimum use of the scarce resources in the economy Planning Commission has deemed it necessary and appropriate to have a credit budget|plan for the scheduled commercial banks. This has to be formulated in consultation with and implemented under the overall guidance of the Reserve Bank. As stated earlier this is not intended to be a rigid but flexible one to serve as a broad guide to the monetary authorities and the bankers. What could be serious objection to this new approach of the present Planning Commission ? This in a way merely represents another stage in the process of planning evolved and gradually improved upon since the inception of planning in the country in 1951. Attempts have been made in the past to progressively bring the commercial banks within the orbit of planning. Before nationalisation of the major scheduled banks the total magnitude of the market borrowings both by the Centre and the States was determined by the Reserve Bank in light of its judgement about the availability of resources, with the banks and the credit worthiness of different States. After the nationalisation of these banks the Government security market became a captive one, commercial banks accounting for nearly two-third of the total subscription to the Government securities. While total magnitude of market borrowing through statutory liquidity ratio (SLR) continued to be determined by the Reserve Bank, the allocation between Centre and the States and that among different States was done

consultation with the Planning Commission, and [illegible] an integral part of the scheme financing [illegible] of the Central Government and dividual [illegible] approved by the Planning Com- ission. The market borrowing of local bodies still mained [illegible] the Plan and these were determined the Reserve Bank after assessment of their re- uirements. Later on these were also integrated with e Plans of the States. Thus in the Fouth Plan eriod market borrowing by the Central Government, ates and local bodies became an integral part of e scheme of financing the Plan However, the de- loyment of rest of the resources with the banks mained by and large within the jurisdiction of the ommercial banks under the overall guidance of the eserve Bank. Of course, in order to achieve the bjectives set out at the time of nationalisation of ajor scheduled banks Reserve Bank laid down cer- in guidelines to be followed by the commercial banks n regard to progressively increasing the share of eir resources to be devoted to certain priority areas. has been observed that on several occasions in the ast the pattern of advances has not been consistent ith that justified from the point of view of making ptimum and rational use of scarce bank resources r increasing production and maintaining price stabi- ility. Dehejia and Tandon Committees have drawn ttention to certain weaknesses in the lending poli- es of the commercial banks and have also made everal suggestions for the purpose. Even some mone- ry economists and bankers of repute have empha- ized in the past the imperative need for credit plan- ing in the banking system. The Planning Commis- ion particularly since 1973-74 when economy wit- essed a high rate of inflation has been emphasising he urgency and desirability of formulation of an ggregate monetary budget for the economy and the redit plan for the commercial banks. It is indeed amazing that the banking industry [illegible] an important and vital segment [illegible] a command over enormous resources [illegible] fully brought within the ken of planning.

The fundamental question to be considered is whether the pattern of lending and disposition of bank deposits which are largely in the nature of house- hold savings and which have been sought to be in- creased through fiscal and other Government poli- cies should not be determined in consultation with the national planning body. If the savings of the community including the bank deposits have to be utilised most optimally and efficiently in accordance with the objectives and priorities of the development plan there seems to be no escape from bringing the banking industry within the framework of the Plan. Should then in view of these overriding considerations, the banking sector be left out of planning process merely due to jurisdictional consideration or that it might undermine the autonomy of the Central Bank or the Commercial banks ?

For the formultaion of the credit plan for the scheduled banks for the five year as well as annual plan period in conformity with the national Plan a system would need to be introduced whereby Re- serve Bank is actively associated with the process of Plan formulation on a continuing basis. The bank- ing institutions in the country being vital links in the credit system may also be involved in this process so that they are duly informed of the Plan priorities and strategy and are able to purposefully translate these in the disbursement and deployment of bank credit. What is, therefore, needed is an integration and harmonization in the approach of the monetary authorities, the bankers and the planners in regard to the deployment of bank resources. ☐

A Decade of Bank Nationalisation

During the first decade of bank nationalisation here has been a substantial growth in deposits, cred- ts to priority sector and above all the rapid expan- ion of bank branches particularly in the unbanked reas.

Advances to priority sector durinng the period rew from merely Rs. 504 crore in June 1969 to Rs. 137 crore in December 1978. While in December 977 it were Rs. 3,959 crore. Bank deposits also in- reased to nearly 30,000 crore at the end of April 1979 from Rs 22,437 crore a year before. In total the bank credit reached 30.5 per cent at the end of December 1978 which was 14 per cent in June 1969.

The most phenomenal progress was in the area of bank branch expansion. The total number of new bank offices opened since July 1969 upto end April 1979 were 21,760. Out of this 11,213 branches were opened in the unbanked areas, bringing total number of bank branches in the country to 29,874 which is a four fold rise during the decade. This expansion envisages, on an average, one bank office for every 21,470 persons in the country. The average has been brought down from 65,000 what was in June, 1969. The number of rural bank offices went up to 13,064 from a bare 1,832 in June, 1969 while it was 11,802 at the end of June 1978. The percentage of rural bank branches thus has risen from 22.4 to 43.7 ☐

THE VILLAGES ARE SINKING

Bepin Behari
Joint Director: Planning Commission

THE most distressing feature of Indian planning is its failure to generate rural prosperity. Poverty in villages persisted even when the general level f economic development was rising As a result of lanned efforts, the index of per capita income at consant prices rose from 100.0 in 1950-51 to 144 7 in 975-76. In consequence, a stagnant and dependent conomy was transformed into a modernised and a nore self-reliant one. The Planning Commission ssigned a central place to village industries, provided bundant financial resources for rural industrialisaon, and established a net work of institutions to give organisational support. Yet, the Indian villages reained moribund and their living conditions appalling his anomaly is recognised in the Draft Five Year lan: 1978—83. Having highighted the progress chieved during the last thirty years or so, it recorded at "the number of unemployed and underemployed as still very high and more than 40 per cent of the opulation lived below the poverty line".

Measure of Poverty

The measure of poverty in any community is diffiult and it suffers from several pitfalls. Several attempts ave however been made during recent years to assess e extent of rural poverty in India Assuming that per apita annual income of Rs. 240 at 1960-61 prices as necessary for bare subsistence, Dr Minhas estiated that 184 million persons in 1960-61 and 154 illion persons in 1967-68 lived below the poverty ne. One could dispute this definitional level of poverty the country, but none could turn the Nelson's eye this order of deprivation among the teeming rural opulation. Under varying assumptions of poverty line, Bardhan, Dandekar and Rath, Ashok Rudra, and Professor V K. R. V Rao have tried to measure the extent of rural poverty in India. Bardhan considered Rs. 180 at 1960-61 prices as the minimum level of annual income which could enable the rural individual to obtain the minimum nutritional requirements. This showed that 38 per cent of the rural population in 1960-61 lived below the poverty line, which in 1968-69 increased to 54 per cent. Dandekar and Rath estimated that 40 per cent of rural people in 1960-61 lived below the poverty line on the assumption that only a per capita annual income of Rs 170.8 at 1960-61 prices was adequate to obtain a daily intake of 2,250 calories; this proportion according to them remained more or less unchanged during the next seven years. Ojha estimated the rural poverty in terms of actual food consumption in grams per head and came to a conclusion that the proportion of rural population living below the poverty-line increased from 51.8 per cent of the rural population in 1960-61 to 70 per cent in 1977—78. Dr. V. K R. V Rao as a Convener of a Working Group consisting of Dr P. S. Lokanathan, M. R. Masani and others set up in 1961 had recommended a national minimum income for each household of five persons to be not less than Rs. 100 a month in terms of 1960-61 prices. Extending his study for 1973-74 andcomputing for this year the requirements under other studies he has concluded that percentage of rural house-holds with per capita consumer expenditure under different poverty norms living below them increased between 4 57 and 6 52 percentage points between 1960-61 and 1973-74

The Views expressed are strictly of the author and not necessarily of the Planning Commission.

Increase in Poverty

There has been an increase in the magnitude of rural poverty in almost all States of the Indian Union.

The estimates made by R. K. Bardhan showed that only eight States, in 1960-61, had higher than the national average for people below the poverty line which in 1967-68 showed nine States under this category. In 1960-61, the highest percentage was registered by Orisa, Tamil Nadu and Andhra Pradesh, all between 47 and 56 per cent, but in 1967-68, Andhra Pradesh dropped out of the list giving place to Mysore and West Bengal. This year, the highest levels were registered by West Bengal, Bihar, Kerala and Orissa in that order, the range extending from 74 per cent for West Bengal to 64 per cent for Orissa. One estimate puts 30.75 per cent of the rural population in Kerala below the poverty line. It is noticeable that in no less than nine States, according to P. K. Bardhan, the proportion of the rural population living below the poverty line has substantially increased.

TABLE 1

Proportion of Rural Households under Povarty line

Poverty norm	Percentage of rural households with per capita consumer expenditure below the poverty line		Increase in percentage points
	1960-61	1973-74	
Bardhan . .	29.80	34.59	5.21
Dandekar and Rath	34.75	40.58	5.83
V.K.R.V. Rao Working Group .	52.74	59.26	6.52
Ashoka Rudra .	66.17	70.74	4 57

Causes

he causes of this increasing intensity of poverty said to be many, ranging from distribution of land, availability of non-agricultural work, poor skill, of demand for rural crafts, absence of marketing ities and such other causes to large-sized rural seholds, break-down of traditional social organin and so on. But, poverty, in fact, is the outcome complex set of relationships within the rural society controls the distribution and use of resources in society. That increasing intensity of rural poverty ost of the industrialised States of the country, (as evident from the following table,) is closely linked the mechanism by which the general industrialin strategy in the country increasingly shifted the rol over rural resources to the managers and proors of large-scale manufacturing units :

TABLE 2

Changes in the promotion of rural households in advanced States below poverty line

States	1960-61	1973-74
West Bengal . . .	22.23	53.88
Tamil Nadu . . .	39.59	46.10
Maharashtra . .	30.85	40.19
Karnataka	33.22	42.94
Gujarat	20.43	31.97
Punjab*	11.56	12.48

*Punjab included Haryana and large parts of Himachal Pradesh in 1960 61.

These data show that rural poverty is a concomitant of industrial development in the country. As the level of economic development rises, a larger proportion of rural population sinks below the poverty line. Even when an agricultural State with highly developed small-scale units forges ahead, as in the case of the Punjab, a larger proportion of rural population in it sinks below the poverty line.

Khadi & Village Industries

There is a possibility to formulate a radically different kind of strategy of industrialisation under which the rural-urban complex of the economy is based on a healthier relationship. In several countries, the living conditions in rural areas are quite attractive. To achieve such a balanced approach, E.F. Schumacher campaigned for the adoption of appropriate technology. He argued that the villages needed a different system of production based on a different set of cost-benefit analysis. Under Indian conditions, Mahatma Gandhi envisaged rural prosperity through a different strategy. By adapting a proper production-consumption nexus suited to basic needs of the Indian rural conditions, he thought that a healthier economic millieu could be produced in the villages where the artisans did not suffer industrial deprivation. With this aim in view he organised the khadi production and made it an important plank of his political agitation. He thought that the rural poverty could be ameleorated by satisfying, the basic needs of the immediate surrounding based on local resources and not catering to the needs of urban or overseas markets. The important aspects of Gandhian strategy is that it did not accept higher wage-rates as the prime-mover of rural prosperity. "If we merely go on sending to Bombay the khadi produced in the village, the object can never be accomplished, however high a wage we may pay to the village spinners", the Mahatma stated.

PD/79—10

In the Gandhian scheme of things, khadi was the concretisation of a new economic philosophy. Khadi could avoid adverse effects of the industrial society which was alien to India. The achievement of political independence itself would not produce rural prosperity unless the khadi and village industries were promoted.

The efforts to institutionalise various industries, after independence, overlooked the basic approach of integral village reconsruction. The operational network for khadi and village industries did not lay emphasis on "evolving a programme satisfying more the basic needs of the immediate surroundings based on local resources than catering the needs of urban or overseas markets" The will of the country to revive the Indian villages was however expressed by the organisation of specialised institutions attending to various needs of the village industries. The constitution of the six Boards concerned with planning and development of village and small industries was important in this regard. The Government constituted the All India Handloom and the All India Handicrafts Board in October, 1952 and November, 1952 respectively to advise her on matters relating to handlooms and handicrafts industry. In February, 1953, the All India Khadi and Village Industries Board was constituted to formulate and implement programmes for the production and development of khadi and village industries. The Small Scale Industries Board was set up in November, 1954 to coordinate the activities of various institutes and corporations engaged in related activities and to evolve various schemes to develop this sector. The Central Silk Board which was functioning since 1949 was reconstituted in April, 1952, while a statutory Coir Board was established in July, 1954 to promote the development of coir industry. Soon after the organisation of the institutional network, the basic Gandhian strategy of locational production-consumption unification receded into the background and the general rules of commercial profitabilitty of an industrial society began to be adopted. After the construction of holy temples, God withdrew to his heaven and the priests began to rule supreme while the world slept in ignorance as before.

The Small Scale Industries Board is primarily a high-powered advisory organisation to provide guidelines for planning, programming and implementation of developmental activities concerning modern small scale units. Main activities of this sector are carried through, Small Scale Industries Development Organisation (SSIDO), National Small Industries Corporation (NSIC), and Small Industries Extension and Training Institute (SIETI) and various small industries development corporations. The primary responsibility for development of village and small industries rests with the State Governments, but these organisations have been actively engaged in this programme. The SSIDO along with its 16 Small Industries Service Institutes, 27 Branch Institutes, 41 Extension Centres, Two Training Centres and five Production Centres have been concerned with technical consultancy including modernisation, economic and statistical consultancy and information service, technical and managerial training, management consultancy, and internal as well as external marketing services. The group of industries under the purview of SSIDO, producing more than 2500 items takes its place between cottage and village industries and large scale industries. In 1978, as many as 3.19 lakh small units were registered, employing 31.9 lakh persons and having a fixed assets worth Rs. 2,411 crore. They produced goods valued at Rs. 8,500 crore and in 1976-77 accounted for 17 per cent of the total exports of the country. About 35 percent of the small scale units are located in the backward districts, but it is significant to note that the small industry units are predominantly urban in character and they are vitally linked with the growth and development of large-scale manufacturing concerns and with the prosperity of urban consumer-elites.

The All India Handicrafts Board

The board was set up in November, 1952 to advise the central government on problems relating to handicrafts embodying the traditional skills of artisans and to suggest measure for improvement of these skills and promotion of production and marketing of such products, is rooted more closely to rural areas. Items of hadicrafts such as wooden toys, artistic pottery, metal carvings, papier mache, cane and bamboo products, brocaded sarees, gems and jewellery are highly decorative artistic products. The All India Handicrafts Board is concerned with measures needed for their technological improvement, design development, quality control, research, training and extension, cooperativisation of artisans and provision of finance and raw materials; the Handloom and Handicrafts Export Corporation organises their exports. The AIHB has five regional offices, four design and technical development units and 24 marketing extension centres. The annual production of handicrafts in 1977-78 was estimated at Rs. 550 crore providing employment to 18.2 lakh persons. Exports of this sector has been rising. Thus AIHB has contributed towards skill formation and improvement, increase in production and organisation of sales, both internal and overseas. In the process, rural poverty has been bypassed and the artisans sinking below the poverty line left to swim by themselves The Handicrafts Board has certainly helped in the preservation of highly skilled

traditional art but in galvanizing the wheel of rural prosperity, its contribution has been in significant.

Handlooms under which hand-weaving of cloth from yarn produced by mills is carried out represent an important sector of rural industries from the point of view of dispersal employment and exports. Along with powerlooms, This sector produced about 55·3 per cent of total textiles providing employment to 6.7 million persons. The industry next only to agriculture, employs a large number of people. The Development Commissioner of Handloom is concerned with cooperativisation, intensive development of projects, improvement in designs and provision of yarn, dyes and looms. In addition to apex cooperative institution responsibile for production and marketing of handlooms in the cooperative sector, a number of States have constituted Handloom Development Corporations to take care of the needy of the large number of weavers who are still outside the cooperative field. In 1976-77, handloom products worth Rs. 272.15 crore were exported. Handloom weavers have been considerably assisted and their interest safeguarded. The progress in this sector shows that the production expansion by itself cannot generate sufficient momentum for income generation in rural areas. In order to work out a detailed programme for rural development, the discovery of this missing ingredient is very necessary.

Khadi and Village Industries Commission

The Commission is charged with the responsibility of planning, organising, and implementing programmes of development for khadi and village industries. It is also expected to organise training of personnel. The Commission builds up reserves of raw materials and implements, supplies them to the artisans, provides for sales and marketing of the products and promotes researches in related production technology. The Commission the biggest organisation in the country is engaged in colossal quasi-commercial activities. Within the network of KVIC at Present there are 24 State Boards, 694 registered institutions, 27,071 cooperatives engaged in its work programming; its marketing outlets consist of six emporia, 3,328 Khadi Bhandars and Bhavans, and about 10,000 sales points and gramodyog sales depots. The scope of its activities increased from only nine village industries originally within its purview to 22 village industries (excluding khadi) enilsted under it.

The Khadi and Village Industries Commission is considered non-political in nature but by tradition and general expectation an aroma of socio-political hı surronnds its activities. At times, the non-econom dimension of its activities destroys the value (KVIC programmes and makes the Commission i adequate and ineffective for the purpose in view Also, the KVIC has failed even to assist a substanti number of village industries under its purview. Som time back the KVIC covered under its assistance pro gramme only 1.05 per cent of total artisans in carpe try and blacksmithy, 4.20 per cent in village tanner 4.47 per cent in village pottery, 4.50 per cent in fibr and 14·79 per cent in ghani oil. Although KVIC the biggest organisation concerned with village an cottage industries, its coverage of assisted units wit in its purview is so small that it can neither make an impact on their growth, nor can it effectively work ou development programmes for them.

The Commission has failed to make an significant impact even on production and employmer generation in various industries under its purvie Even with regard to earnings, though KVIC has mad some marked improvement, the level reached so fa has been very unsatisfactory. Per capita earnings (KVIC artisans in 1953-54 amounted to Rs. 34.7 pe year which increased to Rs. 348 in 1977-78. It show ed an increase of ten times but in actual terms, th amount earned per day was less than a rupee. Th amount would be inadequate to meet even the min mum needs of the artisan. Even converting the par time employment on a full-time basis, the per capi per day earnings do not exceed two rupees. This by n stretch of imagination can be considered adequate.

As far as production of khadi is concerned, t 1965-66, production had increased from 9.60 milli sq. metres in 1953-54 to 84.85 million sq. metres 1965-66, but after this year, trend began to decli reaching a level of 54.07 million sq. metres 1971-72. Recently, the production has been picki up, but the level in 197-78 amounted to only 68. million sq. metres. Production activities of KVIC (not reflect the market response to khadi program Even when sales were declining and stocks accumul ing, more and more khadi was produced. In 1965-6 the stock of khadi amounted to 84.1 per cent of pr duction, and it exceeded sales by 14.6 per cent ; 1976-77, the stocks amounted to 81.8 per cent production and 88.1 per cent of sales. In 1977-78, t level of stocks reached an all-time peak of Rs. 48. crore amounting to 74.4 per cent of production a 72.6 per cent of sales. The basic weaknesses of KV operations could be noted from table 3 indicating t growth rates in various programmes under the Co mission.

Programme	1956-57	1977-78	Annual Growth Rate (compound) (Percentages)
1. Total disbursements (Rs. crore)	11.67	49 35	7.11
2. Khadi Production (million sq. metres)	36.20	68.41	3.08
3. Sales (Rs. crore)	6.24	66 52	11.95
4. Khadi Employment (lakh persons)	8.81	9.22	0.22
5. Village Industries Production (Rs. crore)	12 72	192.54	13.81
6. Village Industries—Employment (lakh persons)	6 75	14 94	3.93

The above analysis has revealed at least three important dimensions of rural planning. First, the constitution of an institutional framework, however, laudable the object may appear, does not necessarily tackle the poverty question effecively. The constitution of KVIC which from all general considerations seem a suitable organisation does not provide the necessary answer to rural poverty. Second, the amount of money spent on these institutions at times, may go to waste channels. Once an institution is set up, it cannot be closed down even if it failed to fulfil its original purpose. Some kind of justification is adduced for its continuance. Third, the motive power for rural prosperity does not arise from merely increased production in rural areas or from fabrication of small scale products or from the revival of traditional handicrafts.

Inadequacy

Soon after their constitution, the inadequacy of various Boards in fulfilling their assigned purpose began to be felt. They might have been necessary, at the initial stages, to provide specialised assistance and expertise to different sectors of village and small industries. The distinctive role of different specialised Boards paled into insignificance, the enlistment of industries under their jurisdiction became blurred, the area of operation confused and in the name of rural artisans most of them began to develop their vested interests. The administrators, social workers and the economists out of prudential considerations did not cry that the king wore pretended clothes. But there have been rumblings of dissatisfaction from several Committees and groups which drew public attention to the inadequacy of these organisations

The Village and Small Scale Industries (Second Five Year Plan) Committee set up by the Planning Commission in June, 1955 emphasised that whatever the villagers can undertake by way of improved industry in their own village, should be organised on a village basis. Having examined the working of various Boards, the Committee highlighted the urgency of co-ordination of functions, policy and finance without any further loss of time, and it also drew special attention to the need for eliminating overlapping activities and lacunas. In Februray, 1959, the Village Industries Evaluation Committee set up by the Khadi and Village Industries Commission as well as the Ministry of Commerce under the chairmanship of R. S. Hukkeriker also noted the inability of State Boards, Development Commissioners and Directors of Industries in implementing the programmes in their respective areas, and it observed that the various organisations were mainly concerned with disbursing funds, their actual contribution to development being only marginal. In 1960, the Khadi Evaluation Commission set up by the Ministry of Commerce under the chairmanship of Dr Gyan Chand state the KVIC as suffering from unnecessary accretions, there was need for rationalising its internal organisation in order to run it efficiently and to fulfil the task assigned to it. In June, 1966, the Ashok Mehta Committee considered it essential that both at policy and administrative levels there should be a high level degree of cordination and cohesion among the various constituents of KVIC so that it could function in a dynamic and purposeful way It also observed that various other organisations such as Handloom Board, the Handicrafts Board, the Small Scale Industries Board the Coir Board, the Central Silk Board and the Agro-Industries Corporations needed coordination in approach and programming under the

administrative central machinery. The Estimates Committee of the Lok Sabha in 1965-66 regretted that although the need for greater coordination between the various Boards and agencies concerned with the implementation of the programme of village and small industries was felt for a long time, no effective measure in this direction had been taken so far. They noted that the existing Boards were not always able to take a unified view of the entire problem of rural industrialisation because each of them was necessarily conditioned to look at the problems from the standpoint of the needs and interest of the industry falling within its specific sphere. The Public Accounts Committee in its 93rd Report (1972-73) also has not been less critical. Even the Statement on Industrial Policy laid before Parliament on 23rd November, 1977 announced the urgency to "revamp" the State and national level organisational structure of KVIC to enable it more effectively fulfil the role assigned to it; the Statement also declared the Government's determination to effectively promote cottage and small industries in widely dispersed rural areas and small towns and it proposed the District Industries Centres in order to support rural entrepreneurship. Steps have already begun to set up DICs all over the country, but the dangers of institutionalising the programme needed cautious appraisal before a new monolithic superstructure is created in the field.

Multi-pronged attack

The Government's formulation of several supporting programmes to make a successful assault on rural poverty while providing institutional backing to it reveals the official recognition of a need for multi-pronged attack. Considering the large-scale manufacturing enterprises as a powerful opponent, many restrictions have been imposed on their activities so as to limit the operation of economics of scale and raising their cost curve upward. The expanding list of items reserved for small units, impositions on expansion of their production capacity, countervailing fiscal levies to shift the benefit to small sector units and several such measures increase the relative cost disadvantage of large organised units. By quantitative diversion of their products either to small units or to the market at special prices, stringent price control regulations and making the large units operate at non-economic levels virtually reduce their profit margin thus seriously making them handicapped.

At the same time efforts are made to reduce the cost of small scale production, provision of easy finance, either under the schemes of credit guarantee, concessional finance, margin money, or under unredeemable loans, subsidies, rebates and such other devices along with capital and transport subsidies lead to cheapening of production costs in small units. They are also accorded easy supply of necessary industrial inputs, at times at subsidized prices. These are intended to reduce their factor costs.

Besides, market discrimination puts further barrier to the expansion of large scale units. Small scale units are provided increasing access to Government, railways and military purchases. Price preferences and quality laxity add further to the privileges of the protected sector of the producing unit. Each Board has concentrated on acquiring gradually increasing marketing facilities for their specific products. All the programmes for helping rural industrialisation have thus led to polarisation of efforts between helping small units and hindering larger ones, both the sectors attempting to cater to the same market and in the process sacrificing the interest of unorganised consumer population.

Suggestions

An effective strategy for achieving rural prosperity needs an integrated approach to agriculture, industry and other welfare programmes. The Ministry of Agriculture has already initiated schemes relating to drought prone areas, small and marginal farmers, command development and such other areas. It is essential that the agricultural farmers and workers are ensured better and regular returns. The Antyodaya movement presently attempted in Rajasthan, Uttar Pradesh and Tamil Nadu may soon spread to other parts of the country. Advantages flowing to agricultural population should be moulded in such a way that the distinction between agricultural operations and rural industry activities are woven together.

The organisation of District Industries Centres, which is contemplated as the main motive force to district economic development, could be effective only when all the other Boards and agencies operating in the area are structured in a unified system. The various Committees which evaluated the working of these Boards have drawn pointed attention to this fact. Such a step will be strongly presented by these Boards due to vested interests developed by those who control them. The ethical code adopted by the three monkeys averse to seeing, hearing or speaking any evil may secure bliss in Devaçhan but for a social engineer the practice would be dangerous. The Government, for this reason, will have to take courage in both hands to destroy the separate existence of all these Boards and

Commissions. All these organisations should be put under one Directorate for Rural Development on the pattern of Directorate General for Technical Development which is doing valuable service to large-scale sector. The budgetary allocation, personnel distribution and programme formulation for the small sector should be entrusted to this Directorate for Rural Development. The Ministry of Industry under which all the Boards have been functioning presently could be made the nodal Ministry for the Directorate

The second aspect of orientation is concerned with the listing of items entrusted to rural industries. The increasing number of reserved list as is seen from above, is no answer to the problem. Rural industries need not be non-competitive, but a new norm for the operation of rural units would be imperative. These norms should not be compared with those existing in urban areas. Wherever marketing of the products presents difficulties, it should be considered as a danger signal.

Khadi can be permanent only when it has obtained a permanent footing as a village wear.

Village Industries should be promoted generaly for the use of the local people.

Mahatma Gandhi had once stated that Khadi can be permanent only when it has obtained a permanent footing as a village wear on which analogy it is implied that he wanted that the village industries should be promoted generally for the use of the local people.

The Gayanchand Committee Report had rightly mentioned that "since 1953 when the Khadi and Village Industries Board was constituted, the dependence on the market economy has acquired even greater importance, and it has got even more deeply involved in the calculus of production for sale and market prices and unsuccessful attempts to mitigate the competitive disadvantage of khadi in the market". In order to transecend this limitation, the Report suggested the introduction of production for use and redirection of the movement of goods to the limit to realise the principle of maximum social advantage The items undertaken for rural production should be those which are basic to the requirement of the area and whose production could be undertaken primarily based on local resources, both human and material.

Rural population should also realise that the ostentatios living of the metropolitan areas would not suit their Socio-economic pattern of living.

The third direction needed relates to the appointment of a village level planning functionary and the changing role of Village Panchayats in the programme of rural prosperity. So far all efforts have been made to work out schemes at the Central or the State levels for their adeption by rural areas. This procedure must change The schemes must be evolved by the rural people themselves. The District Industries Centres should merely assist them The Panchayats could divest some of their political preoccupations and engage their attention to economic needs of the region and ways and means to solve them locally. The functionary should be a technical-cum economic consultancy man for the Panchayats. Rural population should also realise that the ostentatious living of the metropolitan areas would not suit their socio-economic pattern of living. The Panchayats should identify the persons seeking employment and willing to undertake socially fruitful work. An attempt should be made to find out the specific work which the community would like done. Items of work of this nature should be performed on the basis of locally available talents, raw materials, and technology. Financial resources for the purpose should also be raised locally. Some marginal help could be channelised through the agency of District Industries Centres and Taluka level officials; but the task of rural development should primarily be the responsibility of village Panchayats seeking very nominal and catalysing help from DICs, State level agencies or the Union Government. Prosperity is never a gift, it has to be earned by one's hard labour. Only when the villagers are aroused to this prospect that the sinking population could be saved.

FOR MILLIONS TO LIVE IN



P. K. Srinivasan
Jt. Director, Planning Commission

FOOD, clothing and shelter are the three basic necessities of man. But in a poor country like ours where about 46 per cent of population is below the poverty line, provision of basic necessities is a stupendous task The problem becomes all the more acute both in quantitative and qualitative terms in a situation of growing population and mass migration from rural to urban areas.

Housing inadequcies in India have both qualitative and quantitative dimensions. Qualitatively conditions in terms of essential facilities like water supply, drainage and environmental hygiene leave much to be desired An idea of the poor quality of housing in the country is revealed in table 1

Another important measure of the quality of housing is the access to essential services. Table 2 gives an idea of the situation for urban areas :

Quantitatively, the housing shortage according to N B.O was 14.5 million units in 1971—2.9 million units in urban areas and 11.6 million units in rural areas. It was estimated to be 15.6 million units in 1974-3 8 million units in urban areas and 11.8 million units in rural areas. According to Dr. C. M. Palria the backlog of housing was 26 98 million units in 1971 The Operations Research Group, Baroda, estimated the deficit in 1971 at 22.6 million units. This wide divergence in estimates of housing shortage is mainly due to variation in the concept or definition of a house.

Even if the most conservative estimate of housing shortage is taken into account, a concerted effort would be called for in the future to (a) wipe out the existing backlog ; (b) to meet the requirement of additional households due to growth of population and (c) to cater to the replacement requirements of obsolescent dwelling units.

To meet the above requirements over a period of 20 years, it is estimated that a construction programme of 4.75 million housing units per year would have to be undertaken—1.25 million units in urban areas and 3.50 million units in rural areas. On the basis of a unit cost of construction of Rs. 10,000 in urban areas and Rs 4000 in rural areas, investment requirement



To solve the housing problem, over a period of 20 years, it is estimated that construction programme of 475 million housing units per year would have to be undertaken.

is estimated at Rs. 2650 crore per annum or Rs 13,250 crore over the five year period. This works out to about 12 5 per cent of total investment envisaged in the 1978-83 period This order of investment is well within the range observed in the past However, the Draft Five Year Plan 1978-83 envisages an investment of Rs 9000 crore in the private sector and Rs 1538 crore in the public sector. If the likely order of investment of Rs. 200 crore by public sector undertakings is taken into account, total investment in the Plan would be round Rs 10,738 crore.

Finance for Housing

What are the possible sources of finance available for housing? LIC makes by far the most significant contribution to housing activity. It has been contributing 15 per cent per annum of its net accretion to the controlled fund for investment in housing. Currently, its annual contribution is around Rs. 80 to Rs 90 crore.

The Apex Housing Finance Cooperative Societies have also been playing a leading role in providing funds to its members. Between 1960-61 and 1974-75, their working capital increased from Rs 4 crore to Rs. 224 crore At the end of June, 1975, their outstanding loans to primary societies amounted to Rs. 202.48 crore.

The State Housing Boards have been playing a crucial role in the promotion of housing So far, 16 States and three Union Territories have set up State Housing Boards These Boards receive funds partly from State Governments and partly from issue of bonds|debentures Some Housing Boards have also raised funds by collecting deposits from the public.

Various Provident Funds also provide advances for housing. However, this assistance for housing is insignificant in relation to the the size of annual net accretion to these funds Advances for housing by Provident Funds amounted to Rs. 2.89 crore in 1975-76, which forms about 0.90 per cent of total Provident Funds collections.

General Insurance Corporation is another source of funds for housing even though currently its role is rather insignificant At the end of 1976, out of a total investment of Rs 588 crore, GIC's investment on land and housing property amounted to Rs. 9.8 crore.

Table—1
Quality of Housing 1973—74
(Percentage of households in each category)

	Independent houses	Chawles/ Bustees	Flats/shared £ houses	Total
Urban				
1. Pucca	19.4	5.7	39.5	64.6
2. Semi-pucca	8.1	3.8	7.7	19.6
3. Kutcha	7.8	3.0	4.0	15.8
Total :	**35.3**	**12.5**	**51.2**	**100.0**
Rural				
1. Pucca	12.0	0.7	5.8	18.5
2. Semi-pucca	22.6	1.5	8.3	32.4
3. Kutcha	37.4	2.1	9.6	49.1
Total :	**72.0**	**4.3**	**23.7**	**100.00**

Table—2
Access to Services in Urban Areas 1973—74
(Percentage of households in each category)

	For exclusive use of the household	Shared with other households in same building	Communal	Total (including others and not reported)
A. Water				
Tap	17.3	18.5	29.2	67.0
Other sources	5.9	7.0	17.1	33.0
B. Lavatory				
Flush	7.2	9.9	2.7	20.1
Other type	16.9	20.1	8.5	46.9*

*33 Percent of the urban households do not have access to any sort of latrine.

To augment the resources for housing, the Housing and Urban Development Corporation was set up in 1970 with an authorised capital of Rs. 10 crore. At present, its equity provision is Rs. 20 crore. In addition to the equity provided by the Central Government, HUDCO's resources consist of market borrowings and repayment of loans advanced by it.

Currently, commercial Banks' involvement in housing finance is mainly by way of their investment in bonds|debentures of HUDCO State Housing Boards and loans to their employees. Presently, their contribution is of the order of Rs. 25 crore per annum. A Working Group appointed by the Reserve Bank of India has suggested that commercial banks should give loans for housing amounting to Rs. 500 crore over the 1978-83 period.

Recently, a new institution called the "Housing Development Finance Corporation Ltd" sponsored by the ICICI has come into being with the main objective of providing loans for residential housing to individuals groups, companies and cooperative societies in urban and rural areas. The Corporation's authorised share capital is Rs. 25 crore.

Government's role in the field of housing in the past had perforce been promotional limiting its activity to (a) provision of subsidised housing on a limited scale for the EWS sections of the community and industrial workers, (b) housing construction to cater to for the use of or disposal to low and middle income groups and (c) provision of supplementary institutional finance to State Housing Boards and other agencies for undertaking composite projects of land acquistition and

development. The situation is not likely to be any different in the near future in view of competing claims on available public resources from other equally starved and priority sectors. The schemes in the housing sector, however, cover only a small portion of the total effort Provisions are also made by public sector undertakings, Railways, Posts & Telegraphs, autonomous corporations and the Defence Departments. The various social housing schemes in the public sector were introduced in the late fifties and practically all of them are in the State sector. On the basis of data furnished by States and Union Territories, the Ministry of Works & Housing has compiled the number of houses completed under various social housing schemes since inception till end of December, 1978. These are given in table 3 :

Inherent drawbacks of the Scheme

The working of these schemes in a number of States reveals that they have not benefited the weaker sections of the community. The experience of many State Housing Boards as also of HUDCO have revealed that the houses constructed for a particular income category are largely occupied by families in the next higher income groups as the payment of instalments of the houses are beyond the paying capacity of the income groups for whom the houses were built. In this context, the observations made by a World Bank study are revealing. They have observed that "At present there are wide gaps in most developing countries between the c of currently produced housing and the ability of lo income urban families to pay for it. The study reve that 64 per cent and 63 per cent of urban residen in Ahmedabad and Madras respectively were unab to afford the full costs of such housing. If the publ sector housing schemes had been formulated to cat to the needs of the least advantaged sections of th community with an eye on the paying capacity of th targeted group these schemes would have really bene fited the sections of the community for whom thes houses were built. Because the cost of these scheme was much above the paying capacity of the class o people for whom they were meant a need arose fo subsidising cost of these schemes. There are inheren drawbacks in a system of subsidised housing activity One of the greatest drawbacks is the difference betweer the market value and subsidised price which always tempts the original allottee to encash this difference by sale to people who are better off.

Need for a Realistic Approach

The housing shortage in the country and the efforts made in the past clearly reveal that the approach in the public sector should be more realistic. The existing income distribution pattern would clearly show that vast majority of our urban population having an household income of Rs. 350 per month cannot afford a pucca house based on conventional construction techni-

Table—3

Progress of various social housing schemes in the public sector since inception as on 31-12-1978

Name of the Scheme	Number of houses Sanctioned	Number of houses Completed
1. Integrated subsidised Housing Scheme for Industrial workers and EWS of the community	2,51,158	1,86,102
2. L.I.G.H. Scheme	4,17,040	3,29,066
3. M.I.G.H.	51,247	41,250
4. Village Housing Projects Scheme	1,00,271	66,817
5. Rental Housing Scheme	36,204	31,063
6. Subsidised Housing Scheme for Plantation Workers (Central Sector)	24,060	15,520
7. Slum Clearance & Re-Housing (as on 31-12-77)	1,69,523	1,29,474
	Acquired	Developed
8. Land acquisition and development (acres)	32,773	16,587

9. Provision of rural house-sites (million)

(a) Total number of eligible families	11.50
(b) No. of families allotted sites	7.36
(c) No. of sites developed	1.74

ques. The solution lies in adopting "growing housing" concept, initially based on sites and services programme (costing not more than Rs. 2000 to Rs. 4000) to be provided close to employment centres with all essential civic services and having sufficient security of tenure. The security of tenure would be an incentive for the allottees to improve their houses as their income improves. Even at this low cost, the housing programme can never be large enough to accommodate all the poor who—live in slums. There does not seem to be any immediate solution for squatter settlement except their upgradation. It should be recognised that an area becomes a slum not because of its structure but because of its environment.

If the housing activity is not to serve only the affluent class and heavy subsidies are to be eliminated, conventional construction technology has to be suitably modified. Standards relating to land use, floor space, quality of finish and other specifications, utilities and even durability of materials have to be modified suitably to bring down the cost within the paying capacity of the people. This would call for modification in the building bye-laws, land use control, density requirement, minimum plot requirement and land requirement for roads under various bye-laws and codes of the local bodies and Town and Country Planning authorities.

Even though Science and Technology infra-structure in the field of low cost housing has grown substantially its application at the operational level has not been imperative. Unless low cost housing is adopted on a mass scale the solution of housing problem would remain a permanent feature of the Indian economy.

The rural housing programme has to be viewed not as an isolate objective but as part of a comprehensive scheme of rural reconstruction and development. In this area the role of the public sector is more to facilitate self-help housing and provide resources than to undertake building activity directly. Provision of house-sites and assistance for construction on the sites should be the main public sector activity.

From the point of view of return on investment, housing at present compares unfavourably with other avenues of investment. The public sector can affect the level and pattern of private sector activity in the field of housing by intervening in housing finance market through incentives and by legislative enactments like Rent Control Act and the Urban Land (Ceiling and Regulation) Act.

The ultimate solution to our housing problem lies in constructing low cost housing on a mass scale. It is an economic axiom that the effective demand for houses, as per any other goods and services, depends on the paying capacity of the people, which in turn is a function of income. Unless this basic fact is recognised no amount of effort to solve the housing situation will

Employment Implications....

(Contd. from page 45)

actually in charge of the programme at the district level. We should ensure that administrative expenditure of these Centres are kept at a low level

In the preceding discussion, we have not questioned the relevance of cottage and small scale industries in creating employment, at least in the first instance. We have also indicated the likely bottlenecks in the successful implementation of a programme of cottage and small scale industries in rural areas. We have particularly emphasised the role of the bureaucracy to deal with such a massive programme. In conclusion, it is safe to assume that the success of cottage industries in creating employment is directly reflected in our efforts to overcome the various problems already outlined. One would like to strike a note of caution with regard to pursuing a policy of allowing too many units to be set up without consideration of problems of availability of credit and raw materials, such our resources-physical, entrepreneurial and managerial—are scarace. Also, the administrative machinery has to gear itself to this new task which by no means is easy □

Poverty Causes and Cure

(Contd. from page 58)

actions with a turn of the developmental process in the direction of social justice and reinforcement of the position of small producers and workers during the productive process itself, continued stress on restraint of growth of population, focus on intensive development of agriculture and of ancillary and subsidiary industries and occupations, rural development programmes for development of economic infra-structure and productive assets in the country-side, with emphasis throughout on improvement of productive capacity of the poor and their active participation in the productive and planning process through revitalisation of local organs of administration or otherwise. Again, Governments and enterprises would be well advised to eschew wasteful and unproductive expenditure, ostentatious consumption and deficit-financing or excessive borrowing and follow the path of fiscal discipline and cooperate to promote an environment of comparative price stability for providing the minimal framework of protection to the sub-subsistence standards of the poor and very poor. □

ASSAULT ON POVERTY —WEST BENGAL FRONT



S. K. RAY

Our Sr. Correspondent, Calcutta

THE nation has set before itself the task of eradicating poverty within the eighties, and in West Bengal, in line with the objective, a concerted assault on mass poverty is well under way. With only Bengal bears 8.12 per cent of the total population, the density being 504 persons per sq. kilometre, according to the 1971 census. Of the State's present population of 5 crore 20 lakhs 75.25 per cent live in the village. With a majority of the rural population living below the poverty line and sizeable sections of the people in urban areas hovering around the poverty line, the task of eliminating poverty in West Bengal is no doubt a formidable one.

Affluence Amidist Poverty

Rural West Bengal presents a disquieting spectacle with small islands of affluence in an ocean of poverty. As agriculture has flourished only a handful of persons have usurped the fruits of the prosperity whose real architect, the man behind the plough, has been condemned to a miserable existence. The pertinent question that arises here is, how the rich farmers have become richer and the poor peasants are poorer still ? The answer lies in the fact that while a small section of the agricultural population has held the lion's share of the total farm land the vast majority have either grossly uneconomic holdings or no holdings at all.

According to a recent estimate, those possessing more than ten acres of land constitute a mere four per cent of about 45 lakh land-owning families in the State and they occupy as much as 39.3 per cent of the total farm land. More than thirty lakh families are those of marginal farmers owning land holdings between 01 and 2.5 acres each. Then there are twenty lakh landless families living on meagre wages. The small and marginal farmers have had little resources to take advantage of the increasing flow of agricultural inputs and of modern agricultural practices. The growth in agricultural production has therefore swelled the coffers of the jotedars only.

Another significant feature of the State's agricultural economy is that a major part of the total cultivable land is under the 'barga' (share-cropping) system. The share-croppers numbering about 32 lakh have never had security of tenure nor a fair share of the produce. On the other hand the jotedars always have an upper hand because of the share-croppers' economic dependence on them.

There is little scope of enlarging the net sown area of the State which now forms about 66 per cent of the State's geographical area. And, with the gradual decay, of village and cottage industries, people's dependence on agriculture for livelihood has grown. Those engaged in agriculture in 1971 accounted for 57.49 per cent of the total number of workers as against 53.56 per cent in 1961. More distressing is the rapid increase in the proportion of landless cultivators and agricultural laboureres. Their ratio to the total number of farmers has risen from 28.13 per cent in 1961 to 44.78 per cent in 1971. It is an unmistakable evidence of greater impoverishment among those who live on agriculture. No wonder therefore, it is an unedifying picture of mass poverty, unemployment and under employment.

Double-Edged Strategy

Committed as it is to ameliorating the lot of the poor and the under-privileged, the Left Front Government in West Bengal launched a frontal attack on this mass poverty soon after it took over the reins of administration. The main thrust of this attack is rightly in the rural areas where it has been a grim struggle for survival for vast numbers of people. The strategy in the agricultural sector consists in a series of redistributive measures on the one hand and an adequate provision of production aids on the other. The redistributive measures which will lay the groundwork for rural development comprise protection of the rights of the share-croppers, intensification of land reforms and ensuring fair wages to farm workers. And, at the same time, steps are being taken to reorient the administrative and organizational set-up to carry agricultural inputs and the latest agricultural know-how to the doorsteps of the poor peasantry and help them raise the production and productivity of their holdings.

A programme called Operation Barga was launched in September, 1978 for quick recording of the names of all share-croppers in order to extend to them the protection of the law including safeguards against eviction and a guarantee for a fair share of the produce. Already the names of about 6,60,000 share-Croppers have been recorded. As for land reforms, sustained efforts are being made to detect the lands still being clandestinely held by jotedars and big land-owners in excess of the celiings prescribed and distribute it among the landless and the marginal farmers. The fact that only about eleven lakh twentythree thousand acres of farm land out of a total of about one crore and forty lakh acres, could be vested in Government till the end of 1978, is attributed to some lacunae in the existing law which is sought to be amended.

Yet another piece of legislation, the first of its kind in the country, will confer more benefits on the poor farmers. It is proposed to introduce an element of progression in the land revenue system and exempt smaller owners of land with lower productive potential from the burden of revenue through the West Bengal Land (Farm Holding) Revenue Bill, 1978. The lot of the wage-earners is also improving with a steady increase in the levels of farm wages all over the State following a sustained campaign built up by mass organisations with administrative support.

Tools for Increased Production

It is not enough to give land to the landless or to afford legal protection to the share-croppers against exploitation by jotedars. They need be provided with the tools and aids for increased production to fulfil the ultimate ends of land reforms. In the first instance, in order to free them from their age-old bondage to the usurious money-lenders easy credits should be made available to them. A pilot project was organised in 23 selected blocks in 12 districts of the State during last year's kharif season in collaboration with public sector banks to finance 12,000 share-croppers and assignees of vested land. During this year's kharif season it was planned to extend the scheme to about 4,00,000 people. The quantum of credit, both short-term and long-term, being disbursed through cooperative credit societies is also being progressively increased. As much as two-third of the short-term and long-term cooperative credit facilites will benefit the less privileged sections of farmers.

In fact, the entire cooperative movement is being revamped to make it an effective vehicle for timely and adequate supply not only of agricultural credit but also of implements, fertilizers, seeds and pesticides to the poor farmers. If the cooperatives are to play a meaningful role they must be purged of vested interests and become people's agencies. The relevant law has therefore been amended to provide for compulsory elections. Small and marginal farmers and share-croppers are also supplied with minikits containing seeds, fertilizers and pestisides.

In order to provide for a dependable source of supply of quality seeds, sixty seed multiplication farms, are proposed to be set up. With institutional finance new minor irrigation installations are being commissioned in different districts bringing more and more areas under assured irrigation. Plans are also afoot to make a beginning with crop insurance, insurance of minor irrigation installations and establish call centres for

prompt repairs of agricultural machinery and minor irrigation installations owned by farmers.

In the context of large-scale underemployment in the rural areas the scope of farm activity is being diversified with special emphasis on animal husbandry to provide fuller employment The State Government is participating in the Operation Flood II, a programme to be jointly implemented by the State Government, the National Dairy Development Board and the Indian dairy farming which will benefit at least five lakh livestock farmers in the State. The programme to be carried out through cooperative societies will aim at covering the poor peasants in particular

Creation of Productive Work

Needless to say, the assault on poverty will succeed to the extent more and more productive work is created for the unemployed and underemployed to augment their incomes, thereby increasing their purchasing power. While accelerated farm activity resulting from the various measures being taken by the State Government is generating additional work and additional incomes for the weaker sections of the farming community, the large number of projects being executed under the Central Scheme of Food for Work Programme and the Rural Works Programme, both meant for the construction of durable community assets, are directly contributing to the creation of new employment opportunities for the rural poor. The widening scope of these two programmes will provide larger and larger numbers with gainful work.

Yet there is no denying in the fact that the agricultural and allied sectors of the rural economy have a limited potential for additional employment. The choice therefore inevitably falls on the small scale and cottage industries sector to generate productive work on a massive scale to cope with the equally massive nature of the rural unemployment problem The State Government has rightly opted for a labour-intensive technology and fallen in line with the Centre's policy of reviving cottage industries and accelerating the growth of small-scale industries.

A Boost to Small Industries

The problems of growth faced by small units primarily relate to the availability of finance, raw materials, infrastructural and marketing facilities and the Government has effectively stepped in to regulate the market forces that have hitherto stifled their growth. New incentive schemes have been sanctioned extending fiscal incentive and relief to ancillary, cottage and small scale industries including industrial cooperatives in backward areas and for encouraging research and inventions in the small-scale sector. With major programmes of financial assistance under the Bengal State Aid to the Industries Act and from the West Bengal Financial Corporation the credit needs of small units are being taken care of. Also being implemented is the Additional Employment Programme with emphasis on self-employment in projects set up with assistance under the Margin Money Scheme. Last year the State Government made a substantial relaxation in the criterion of eligibility for margin money assistance and this year enhanced the rates of its contribution to the project cost. Essential raw materials and infrastructural and marketing facilities are being provided to the small units through the West Bengal Small Industries Corporation.

The scheme of incentives, in the form of contribution towards the cost of feasibility study, refund of sales tax, subsidy towards power etc., offered by the West Bengal Industrial Development Corporation for setting up industrial units in the State has been modified by the State Government tying up such incentives with the use of local resources and labour-intensive technology.

Handloom industry, the principal cottage industry of the State providing livelihood to about two lakh families is being accorded priority attention. It is planned to bring within the cooperative fold sixty per cent of the weavers during the sixth Plan period in order to do away with their dependence on master weavers for looms and necessary raw materials. One hundred and thirty model weaver's cooperatives will also be set up at the block level. The Handloom Apex Society has been implementing the Janata Cloth Scheme and the level of production under this scheme is being progressively increased.

DIC and IRD Programme

As conceived in the Industrial Policy Statement of the Centre of December 1977, District Industries Centres have been set up in all the districts of the State to offer under a single roof the entire package of services to the small entrepreneurs and village artisans Under the aegis of DICs the full potential of each district in the growth of small and village industries with local raw materials and local talent, will be explored and exploited.

For maximization of opportunities for gainful employment through a coordinated development of all

sectors of the rural economy the Centrally sponsored Integrated Rural Development Programme was introduced in 163 of the 335 blocks of the State till the end of March this year. The Programme which symbolizes a decentralised approach to planning aims at a balanced development of agriculture and the allied sectors as well as village industries with such technologies as will ensure an optimum utilization of local resources in men and material. The IRD programme therefore holds out the promise of providing work to all the idle hands according to their capabilities.

Meeting the Minimum Needs

Poverty cannot be eliminated merely by increasing the incomes of the people. A well-knit infrastructure is also required to be laid out as a redistributive measure to meet the minimum needs of the people in respect of essential commodities, safe drinking water, health care, housing and functional literacy. The Government of West Bengal lays great stress on an effective public distribution system which, in its view, is the only way of insulating the weaker sections of the people from manipulations of market forces by hoarders and profiteers and ensuring for them a regular supply of essential commodities at reasonable prices. The public distribution system in the State which already covers one crore twenty-six lakh people under statutory rationing and the remaining population under modified rationing, is being further strengthened.

Health care services are being extended under the Rural Health Scheme to cover the rural population and message of family planning—the smaller the family the higher is the level of living—is being carried to every home. In respect of safe drinking water the objective is to provide one source for every 300 persons and at least one source for every village. As for housing for the poor, the scales of financial assistance for the construction of huts being given to those who have been provided with homestead plots have been enhanced.

While pursuing relentlessly with programmes of expanding the facilities for adult and vocational education the State Government has set 1982-83 as the target year for universalization of primary education. At the same time, education is being made free by stages to vindicate the basic human right of every poor child to get education. School education is already free up to Class VII. From January next, education will be free for Classes IX and X also. This is the biggest single measure to promote the welfare of the under-privileged—eradication of ignorance being a pre-requisite to removal of poverty.

Members of the Scheduled Castes and Scheduled Tribes constitute more than a quarter of the total population of the State. For their uplift a number of special programmes such as book grants, construction of hostel buildings, provision of seed money, development of infrastructure in areas inhabited by them and organisation of cooperative societies have been taken in hand. In twelve districts having concentrations of tribal people employment-oriented programmes of animal husbandry have been taken up with assistance from the Government of India. Under the Social Forestry Scheme, mixed plantations are being created in the wastelands of southern Bengal for providing fuel and fodder. The forestry programme is generating additional employment, particularly for those belonging to the Scheduled Castes and Scheduled Tribes.

Mobilization at Grass-root Level

No people's programme can be purposefully and expeditiously implemented without the total involvement of the people. The task of eliminating poverty in the State of West Bengal has been rightly entrusted to the rural poor themselves through a process of democratic decentralization. It is an ambitious plan to make the panchayats an effective instrument for all-round rural development. The capacity of the panchayat representatives to shoulder responsibility was put to a severe test soon after they were voted to office. The way they handled the colossal relief and reconstruction work in the wake of the unprecedented floods in the State last year not only armed them with greater confidence but has also strengthened people's faith in them.

The Panchayats have already been involved in such schemes as the Food for Work Programme and the Rural Works Programme and they will shoulder increasing responsibility of planning as well as implementation of the rural programmes for land reforms, supply of drinking water, health care, primary education, irrigation etc. The task of executing the Integrated Rural Development Programme has been assigned to the Panchayat Samities which will act in coordination with the Gram Panchayats and the Zilla Parishads on the one hand and the Government officials at the relevant level on the other. The aim is to bring about a fusion of the local administrative experience with the wishes of the democratically elected representatives of the people in order to give a meaningful direction to all developmental work. These people's representatives at the gross-root level will spearhead a total mobilization of the rural people to win their battle against poverty, and win they will. □

11 DPD/79—12

Removal of Unemployment and Poverty

Anand Sarup
Secretary, Department of Planning, Uttar Pradesh

THE BASIC objectives of the U.P's State Plan for the period 1978—83 are removal of unemployment or significant reduction of unemployment, an appreciable rise in the standard of living of the poorest sections of the population and provision for the people in low income groups of some of the basic needs like clean drinking water, health care, elementary and adult education, housing and minimum services for urban slums.

While production strategies have been formulated to maintain the highest feasible rate of growth, much more emphasis than before is being given to measures for distributive justice. In Uttar Pradesh, analysis of data indicates that this would be a formidable task Out of an estimated labour force of about 344 lakhs, about 4.89 lakhs were wholly unemployed while about 22 35 lakhs were grossly or substantially unemployed in accordance with the data thrown up by the 27th round of NSS. On the basis of the definition of the poverty line adopted by the Planning Commission i.e provision of 2400 calories per day per person for the rural areas and 2100 calories for the urban areas, 57 per cent of the population in rural areas and 46 per cent in the urban areas of the State were living below the poverty line. As regards the modest poverty line which has been defined as 75 per cent of the poverty line, 30 per cent of the population in the rural areas and 24 per cent in the urban areas were below this line.

It was obvious to the planners that the conventional strategies laying emphasis only on high growth rate and the setting up of production targets in key sectors were not adequae to meet the challenge and it was necessary to redefine and reframe the plan priorities and methodologies in order to ensure flow of benefits to target group of beneficiaries.

With more than 82 per cent of the State population residing in the rural areas and depending mainly on agriculture and agriculture-based industries for their sustenance, provision of necessary inputs for growth in agriculture was an important plan priority. The emphasis placed on implementation of programmes of this sector resulted in food grain production, which had been stagnating at a level of about 194 lakh tonnes during the last two years of the Fifth Plan, rising to 212 lakh tonnes in 1977-78. This figure is expected to go up further to 218 lakh tonnes during 1978-79. The increase was possible on account of the substantial increases in the level of distribution of fertilizers which rose from 7 29 lakh tonnes in 1976-77 to 8 60 lakh tonnes in 1977-78 and to 11.20 lakh tonnes in 1978-79. The level of fertilizer consumption which was below the national average during the Fifth Plan is now the second highest in the country, second to Punjab only Much greater emphasis was also placed on the provision of irrigation facilities. The annual installation of new private tubewells and pumping sets State, which was at a level of about 90,000 per year during 1976-77 rose to 1.02 lakhs in 1977-78 and 1 25 lakhs in 1978-79. The additional irrigation potential generated from major and medium schemes rose from 1.92 lakh hectares in 1976-77 to 5.44 lakh hectares in 1977-78 The State took a lead in extending facilities of subsidy throughout the State for construction of private minor irrigation works, a facility which was available earlier to small and marginal farmers in SFDA areas alone. The State also encouraged tubewell borings alone while earlier the emphasis was on complete tubewells including pumping sets This led to more expeditious utilisation of groundwater specially by small and marginal farmers who could not afford a pumping set in addition to the expenditure on boring.

Power provides the basic infra-structure for growth of agriculture, rural and large scale industry. An effort was made to complete the ongoing power projects at the earliest, as a result of which installed generation capacity of the State which was 2615 MW in 1976-77 rose to 2982MW in 1977-78 and 3182MW in 1978-79. With this increase in the generation capacity it was possible to raise the level of electrification of villages from 33098 in 1976-77 to 36298 in 1978-79 and of Harijan Bastis from 9005 in 1976-77 to 12453 in 1978-79.

Cottage Industries

Development of rural cottage and small industries as a means of augmenting, diversifying and dispersing employment, increasing incomes in the rural areas has been an important objective of the Plan. With greater efforts directed towards the growth of this sector backed by aditional financial allocation, it was possible to increase the number of new small units set up from a level of about 4100 in 1976-77 to about 4400 in 1978-79. Value of raw materials distributed to the handloom sector, increased from the level of Rs. 7.0 crores in 1976-77 to Rs 9.50 crores in 1978-79. The production of cloth in the cooperative sector increased from 25.20 crore metres in 1976-77 to about 32.40 crore metres in 1978-79.

Revised Minimum Needs Programme

The State also took a lead in providing basic minimum facilities for improving the quality of life specially in the rural areas. In the field of education emphasis was laid on the opening of primary schools in the unserved areas and on the extension of the adult education programme. During 1978-79, nearly 2,100 additional primary schools and about 6,700 adult education centres were established. In the field of health care, the scheme of community health workers was introduced. New primary health centres, ayurvedic and homeopathic dispensaries were opened only in the rural areas. About 160 such dispensaries were opened in 1978-79.

The provision of clean drinking water is one of the most important aspects of improvement in rural health and environment, Out of a total number of 1,12,561 villages in the State, 35,506 villages have been identified to be problem or scarcity villages. 6,679 villages of the State had been covered to the end March, 1978 which included 5,003 scarcity villages. About 1900 additional villages were provided piped water supply during 1978-79.

Strengthening of distribution system

It is recognised that the benefits of progress will not percolate to the target group of beneficiaries in absence of an effective delivery system. The State has, therefore, laid great emphasis upon the functioning of an efficient public distribution net work. The scale of rations of wheat and rice to every unit cardholder have been substantially increased. In addition, the cardholders have been given the facility of more frequent drawals of ration within the month i.e. upto four times a month for the plains and ten times a month for the hill areas. Cheap controlled cloth is being distributed through 9,569 retail outlets. The retail prices of foodgrains and other commodities of daily use are monitored every week by district level committees and action is taken against erring traders. Elaborate arrangements have also been made for purchase of wheat and other foodgrains at the specified support prices, to ensure that all farmers get reasonable prices for their produce. The distribution system for cement and kerosene has also been improved specially in rural areas and larger quotas of these essential commodities have been allocated.

The State has also done pioneering work in integrated area development directed principally towards families with holdings of less than 0.5 hectares and landless labourers. Such a project was initiated in six development blocks of districts Ghazipur and Ballia and has made good progress. Similar projects are being taken up elsewhere based on the experiences of this project.

Antyodaya Programme

In order to ensure that the benefits of development reach the last man, the State Government formally launched an Antyodaya programme on 2nd October, 1978. This programme envisaged the indentification of the five poorest families from each of the 1,12,000 revenue villages of the State. The basic criteria for being considered as an Antyodaya family were that the total family income from all sources during the year would not be above Rs. 2,000 and in case the family possessed agricultural land and worked on it themselves, then the total holding would not be more than 0.5 ha of unirrigated land or an equivalent amount of irrigated land. Strict criteria were laid down for the selection of Antyodaya families and it

was specified that such selection would be made in specially convened meetings of Gaon Sabhas to which members of Vidhan Sabha/Vidhan Parishad would also be invited The block development officer, village level worker and the panchayat secretary were also required to be present in the meeting of the Gaon Sabha. In accordance with the programme, after the identification of Antyodaya families has been completed, schemes are prepared for each individual family aimed at providing the family with sources of additional income. The schemes, prepared in consultation with the heads of families take into account the skills, resources, aptitudes and preferences of the families. The schemes generally pertain to provision of milch cattle, poultry, sheep, goat and pig rearing units, dunlop carts and rickshaws etc.

Upto the end of May, 1979 a total number of 3.46 lakh Antyodaya families had been identified. Individual schemes had been prepared for 1.14 lakh families and loans and grants had been disbursed to about 54,000 Antyodaya families. Efforts are now being made to streamline the process of framing and sanctioning the schemes and expedite actual disbursement of loan and grants in order to reduce timelag between identification of the beneficiaries and the actual avaliability of financial resources to him to enable him to start the envisaged scheme expeditiously.

Bigger Role for Voluntary Agencies

Antyodaya programme envisages that individual schemes would be for amounts of Rs. 5,000 or less. Half the expenditure to be incurred on the scheme is sanctioned as a grant by the State Government. Regarding the balance amount, efforts are made to obtain it as loan from the nationalised banks, the loan being repayable in easy instalments. The scheme, however, provides that in case there is difficulty in getting loans expeditiously from the banks, the same could also be drawn from the money transferred by the State Government to the Zila Nidhis of the districts concerned. The Zila Nidhi is normally operable by the Zila Parishad but in the case of amounts made available for this programme, utilization out of this fund is sanctioned by a District Level Advisory Committee comprising the District Officers of development departments,, members of Vidhan Sabha and Vidhan Parishad and some nominated social workers or representatives of voluntary agencies. It is also envisaged that the voluntary agencies will in future have a bigger role to play not only in the implementation of the scheme but also in ensuring that the schemes keep going and provide benefits to the Antyodaya fam on a continuing basis.

Decentralisation of planning process

With a view to decentral se the planning pro and to ensure optimum utilisation of local reso of trained and untrained manpower, natural resou raw material and produce articles for satisfactio locally felt needs, the scheme of local level plan was initiated in 1977-78. This scheme envis measures for increase in production levels of f grains other agricultural commodities and goods services for local consumption through schemes drainage, soil conservation, minor irrigation, an husbandry and dairying and small and cottage in tries and crafts suitable for rural artisans. A nun of units for processing of foodgrains and oil s and some small industries based on locally avail raw materials such as manufacture of jute-chord twine have been taken up under this scheme. main features of this scheme are the delegatio powers for sanction of appropriate schemes to dis level bodies and the placement of a sizeable vol of uncommitted funds with the Zila Praishads.

Additional Employment

Efforts are being made to create additional emp ment opportunities by taking advantage of the F for Work Programme. 1.31 lakh tons of foodg were utilised during 1978-79, which resulted i generation of 278.2 lakh man days of employ With the work under this programme, 4200 km unmetalled kachcha roads were completed during year along with 20 kms. of drains. Plantation gramme was taken up on 27,000 hec. and exte work on deepening of tanks for being used as ponds was also aken up.

The State has also taken up in a big way the gramme of integrated rural development. Surveys l been initiated for identification of beneficiary fam and it is proposed that individual beneficiary orie schemes may be prepared and implemented for l identified families in each development bl 11.15 lakh families have already been identified u the programme and schemes for benefitting a 83,000 families have been taken up. □

Development Strategy in Third world

Navin Chandra Joshi
Professor of Economics, Moti Lal Nehru College, New Delhi.

THE most universal characteristic of the developing countries is said to be their poverty and consequential low standard of living. The presence of subsistence sectors in poor countries indicates that there is likely to be much more difference between the rich and the poor in the developing countries than in the developed countries. Apart from this, the gap between developing and developed countries is not only very large but it has been increasing from year to year. Attempts on the part of developing countries to catch up with rich countries in the matter of economic growth now seem to be futile exercises In the rich world itself, the gap between the richest country and the other developed countries has been narrowing. Such then is the background that throws up the baffling question as to why is it that the poor countries of the world are unable to catch up the developed countries in development

Despite about a 5.7 per cent economic growth rate, the world is estimated to have about 600 million people in absolute poverty in 2000 AD and 540 million of them will be from the developing countries mainly of South Asia. It has also been found that so little is known about the interaction of economic and social structures in developing countries that different effects take place in poor countries with indifferent patterns of economic growth. The World Bank in its Report for 1978 has pointed out that in the face of rapidly growing populations the substantial progress of the past 25 years in accelerating growth, modernising economies and raising living standards, had been neither sufficiently fast nor sufficiently broadbased to reduce the numbers in absolute poverty. This is despite the fact that during this period some of the easier opportunities for increasing output have been used up. For example, part of the agricultural growth in the past has been based on bringing unused land into production and drawing on the existing stock of technical knowledge in agriculture. Further, even if trends in reducing fertility remain favourable, the population in developing countries is likely to reach 3.5 billion by 2000 AD (2.1 billion in 1975).

It is also argued that the most important requirement for progress in alleviating poverty is the acceleration of growth in the low income countries, which in the past have grown only half as fast as the middle income countries In both groups it will be necessary to maintain high levels of saving and investment. The scarcity of resources to deal with the most urgent problems of poverty, malnutrition and disease is most acute in the low income countries where there is constantly a difficult choice between investment to increase future production capacity and expediture to meet urgent consumption needs. So far, the more popular thinking has been, what is codified in the Report of the Pearson Commission on International Development which was dominated by W W. Rostow's doctrine concerning the stages of growth. According to this doctrine, development is a linear path along which all countries travel. Development was seen primarily as a matter of economic growth and only secondarily as a problem of securing social changes associated with economic growth. The linear view begged a host of questions about the nature, causes and objectives of development. It tended to focus on constraints or obstacles (particularly lack of capital), the removal of which would set free the 'natural' forces making for the steady move towards ever higher incomes.

It has not been adequately realised that it is a matter of importance for the world as a whole that the poor countries should become more prosperous. A world divided into halves, one poor and the other becoming continuously richer, cannot be a stable World. Such a situation sooner or later is bound to result in conflict What is more, conditions in the poor countries will inevitably become more difficult if these countries are not permitted to have their share of the general prosperity, since their populations are made discontended by the relative difference between the prosperous and the poorer sections of society. And, as the gulf between prosperity and poverty widens, there will be less mutual understanding between the two halves of the world. Tension in the poorer countries will then find an outlet in making more demands on the richer countries.

Historically, the developed countries of the world were capitalistic and they enjoyed certain advantages over the poor countries in the crucial period of their development. They had a large 'non-capitalistic' environment to colonise and exploit the underdeveloped world. They drew raw materials they needed for their development and the colonies provided a captive market for the sale of their finished products. The capitalistic class of developed countries was in a way a revolutionary class that got power through feudalism. Thus ushered in a period of breakthrough in technological advance. In contrast to this, the capitalistic class of the underdeveloped countries has been unable to play that radical role for it could not act as an autonomous force due to the highly integrated nature of the capitalistic world system. The multinational corporations set up by the developed world dominate capitalistic system. They are far richer and more powerful than many of the poor countries. Essentially, therefore, the capitalistic class of poor countries becomes subordinate to the capitalists of the developed countries through the growing penetration of foreign capital foreign aid, trade arrangements as well as military and other alliances. As a consequence, capitalistic class in the poor countries is now no longer able to play the aggressively radical role which it once played in history.

Further, population in developed countries increased after they had adequately developed economically. As such, increase in population facilitated their development by providing labour and also an effective demand for the products. In the poor countries of today, apart from the absolute ever-increasing growth in population, modern medicine has sharply reduced death rates. And this has happened before they could initiate self-sustaining development. In the developed countries rapid development required labour-saving technology and therefore inventions have been made in this direction. Whereas in the poor countries, due to abundance of labour, the use of labour-saving technology has aggravated the employment problems. The developed countries witnessed a high rate of saving due to the frugality of their rich masses. On the contrary, in the poor countries, demonstration effects emanating from the rich countries have resulted in both the capitalistic class and the labour class aspire for higher levels of consumption. This has tended to curtail drastically the savings potential for purposes of their development.

When we talk of economic growth and development, we generally forget that the most basic economic needs of a human being are air, water, food, and shelte Curiously enough, it is precisely these that the peopl of rich countries lack today. As a result of air an water pollution having reached dangerous levels i the developed countries, there is no pure air t breathe and clean water to drink. Excessive urban sation, over-crowding and serious problems of crim have contributed to general insecurity of life in the countries. The increasing rates of suicides, crime an mental illness in the developed countries prove th their ever-increasing economic growth has failed t bring about happiness and comforts in the real sen for the people of these countries. Higher levels o consumption in wealthy countries have resulted i reckless exploitation and depletion of natural re sources

The World Bank study shows that the GNP o developing countries grew at an average rate of 3 per cent per annum during 1950–75 or 3.6 per ce if People's Republic of China is excluded. A majo problem, however, with using growth in average p capita income as the sole index of development is th it gives equal importance to each extra dollar of in come, whether it is earned by a rich or a poor pe son. Ideally, one would like to measure growth i weighted per capita income where each extra doll is multiplied by the social welfare weight attached t its recipient. The welfare weights would presumabl be heavier for the poor than for the rich. Since ther is seldom any agreement on the precise welfa weights to be applied to different income recipient the ideal cannot usually be calculated in practic Therefore, we may resort to various second-best, pa tial indicators, which may be used in conjunction wit data on average per capita income to examine th extent to which growth has improved the economi condition of the poor. Some of these supplementa indicators relate to employment, income distributio and fulfilment of basic needs.

Undoubtedly, a development policy, forming pa of a general economic policy, is complicated and a such, it has to be comprehensive. It must influenc and direct all the activities of a modern society. Fo any development plan and more especially for a lon term plan, one fundamental question is whether th social order within the country is conducive to th force of development. Such a social order is reflec ed in the whole complex of institutions with the rules and regulations which form the society an within which individuals are able to pursue an develop their value system comprising of social, eth cal, cultural and spiritual values.

The irresistible conclusion is that there is no more need for economic growth in developing countries as the overriding goal of economic policy. But then, the issue today is whether the international environment will continue to be as supportive of development as in the past 25 years Developing countries should focus attention on other goals such as eradication of poverty, rural development, reduction of inequalities of incomes and wealth, maintenance of full employment, provision of adequate housing, better distribution and utilisation of health and education services and efficient operation and maintenance of existing works and services. Indeed, in both the developing and the developed countries, the scramble for economic growth need be stopped Their public policy should concern itself with improving the quality of life, reducing environmental pollution, beautifying and revitalising rural areas, providing mass transportation facilities, curtailing private use of automobiles, expansion of health and education facilities, increasing cultural amenities to the masses and inducting a value system in the lives of their people.

What then can be learned from the experience of the past twenty years? Clearly, there is more than one feasible route to equitable growth and development Some countries have succeeded by pursuing market-oriented, outward-looking strategies, relying on entrepreneurial skills (Hong Kong, Korea, the Republic of China), or physical resources (oil exporting countries) as the keys to growth. By contrast, the People's Republic of China has followed a socialist, inward-looking strategy based on considerable natural resources, ideology, and highly effective social organisations. Should then each country select its own socio-economic system from the range of many choices? Is it possible to follow a strategy oriented toward income equality and toward the fulfilment of basic needs without closing off the economy from foreign trade as the People's Republic of China and some of the smaller socialist countries have done?

Although it is true that some developing countries have become worse off in absolute terms since 1950, the blame for this state of affairs can hardly be laid on economic growth Countries in which many poor people have, or may have, become worse off include at least as many fast growers as slow growers. For poor, heavily populated nations like Bangladesh, India, Indonesia and Pakistan, only long-term sustained growth of per capita income, equitably distributed, offers the majority of the people any hope of economic advancement.

In sum, development should be regarded as much more than a matter of encouraging economic growth within a given social structure. It is the modernisation of the total structure, a process of social and economic change on which hinges the making of a community Development should involve stimulating the initiative of villagers and the urban masses for millions of individual deeds by organising people in disciplined problem-solving institutions which have the authority and resources to carry out their own decisions The present industrialised nations should no longer remain as models of development

Land Smiles at Him

SHRI Nandlal of Pacher Village in Chittorgarh district, Rajasthan was a landless labourer. He used to earn a small amount by way of daily wage which was hardly sufficient for him and his family to meet both ends

The novel scheme 'Antyodaya' to alleviate the hardships of such poor people, was launched and Sri Lal was allotted a piece of land measuring about 3 bighas. As the land had not been cultivated till then, it was full of trees, bushes, and was uneven. Poor Nand Lal, even though was ready to put in any amount of labour, found it an up hill task for him Water, to quench the thirst of the land, posed a big problem Moreover, he was penniless and so other inputs like seeds, fertilisers, were out of his reach SFDA came to his rescue and solved all the troubles They selected his land as their demonstration farm. While all the required ingradient for modern cultivation of the soil were provided by SFDA, Sri Lal and his family contributed their mannual labour.

Very soon the land smiled at him Sri Nandlal, who could not afford to have a few kilograms of wheat at a time, harvested about 3 quitals of wheat and some sugarcane, too

Ratan Singh F.P.O., Udaipur

BOOKS

Towards Gandhian Socialism

Janata Economic Policy *by C. N. Vakil, Macmillan Company of India Limited, New Delhi,* 1979. *Pages* 133, *Rs.* 25.

PROF. C. N. Vakil is not only a great economist, he is a great reformer too. He has promptly reacted to major events in the economic history of our country whether it is the falling rupee, the economic consequences of Partition, planning for a shortage economy or the March 1977 events.

Professor Vakil is attracted by the Janata Economic Policy Statement issued November 1977. He congratulates the Janata Party for putting in practice the Gandhian philosophy in Social and economic life The Janata Economic Policy Statement, according to Prof. Vakil, has the objective of evolving an economic system which may avoid the evils of capitalism (exploitation) and communism (regimentation). "This is a concept which is superior to that of the prevailing economic and social systems and will be an effort towards nobler system in which people will enjoy freedom and equality while having the necessary means of life at a reasonable level."

The main objectives of Economic Policy Statement are: (a) an expanding economy, (b) maximum employment, (c) equitable distribution, (d) prevention of exploitation of labour and (e) the adoption of the concept of trusteeship in the use of private property In short, its aim is growth for Social Justice. A commendable aim.

The Janata Party seeks to create a new society in ten years. "Our economy must not only produce adequate quantities of food and clothing, but also ensure that every village house has an assured supply of pure drinking water, that every Indian has a pair of footwear, that every family has a bicycle, a radio, a sewing machine, and that every Indian has adequate supply of soap and minimum health, housing and educational facilities."

Primacy of agriculture and rural development is the heart of the Economic Policy Statement. Utmost decentralisation in the planning process is also emphasised. But according to Prof. Vakil, the existing machinery for rural development has failed. How to change the administration to suit the new requirements with speed and efficiency? Vakil wants the Government to issue an Agricultural Policy Statement similar to that issued on Industrial Policy. On rural development, he has important suggestions. Establish Centres for Rural Development in each district for an all round development of the area. He pleads for starting 'agricultural polytechniques' where systematic and longterm training in agriculture be imparted, Commenting on tax concessions given to industries on rural development, he would rather want them to endow fellowships to persons willing to settle down for rural uplift. Rather than scattered and uncoordinated efforts, Vakil would want to have a "Rural Development Fund" to coordinate theseefforts. The education system too needs to be reoriented to meet this requirement.

The Industrial Policy Statement of December 1977 is then examined. It is a good effort to nurture the tiny sector but the basic information on this sector is not available. A nationwide census on the lines of census of small industries (1974) is called for. He would want organic growth of industry. The tiny should grow into small and small into largescale industry. There should be a balance between the development of the small and the large industry sector.

The test of any plan or programme is the Budget which indicates the allocations and hence the important of certain ideas sought to be achieved. Budget is a plan of action The Budget proposals of 1978-79 and the Draft Plan 1978—83 contain deficit financing. (More so the 1978—80 Budget). According to Prof. Vakil, deficit financing feeds on itself It is the "major cause of growing poverty' in the country In deficit financing we have 'a perfect climate for price to rise'. Why not an Expenditure Commission (soon to be set up) to cut down waste in government expenditure?

The 'Epilogue' on recent development is borne more out of a desire to update rather than adding or substracting to the main thoughts developed earlier in the book. The book is very lucidly written devoid of jargons and could be followed easily by a lay reader or by a commuter on train. A book recommended to all interested in planning for economic development.

S. M. SHAH

Rural Development

Productivity—Special Number on Rural Development (*Jan—March,* 1979) *published by the National Productivity Council, Lodi Road, New Delhi, Pages* 441 *to* 746 ; *Price Rs.* 10.

THE special quarterly issue consisting of 18 papers from eminent scholars and specialists in their own sphere devoted wholly to the Rural development with reference, in particular, to India, presents an informative analysis of rural development in India especially after Independence. Various measures taken in the past to tackle the problem of rural unemployment or underemployment to raise the standard of living of rural people and to eradicate poverty and glaring disparity in rural incomes and wealth have been critically examined and remedies suggested.

While it is a practice with politicians, critics and writers to belittle the work done by the Five Year Plans towards rural development in India, the same the contributors have done here too, but no one will deny that the standard of living of the common man in villages is now not what it was 30 years back. It has definitely improved. Prof. Mahendra Mohan, in his paper 'Marketing in Rural India', owns this, and very rightly remarks that there is still a long way to go to improve the level of the living of the rural population.

This issue, while discussing the necessity and possibility of rural development, traces its history and attempts to ascertain why the desired results could not be obtained The papers published in this issue show that while the Government has its own duties to perform, one of which is to see that the poor are not exploited by the rich and influentials, it is also up to the backward rural people to find out their own leaders from amongst themselves and fight such an exploitation. Mr. Rajesh Tandon's paper 'Rural Development : Problems and Prospects' is a sharp pointer in that direction. He presents two examples of such movements—Bhoomi Sena in Maharashtra and Peer Group in Rajasthan, which achieved good results.

Discussions on the role of financial institutions in rural development by Shri K. S V Menon, necessity of efficient marketing system for small sectors by Shri B. Swaraman and the appropriateness of various alternative sources of energy for cooking, lighting, agriculture and rural industries are very informative and thought-provoking. All these have, however to be understood in the light of the fact that in any rural development programme, attempt must be made to understand the motivational leve Potentiality of the people to participate, the statu of theirselves, the leadership available and the natur of developmental personnel as pointed by Mr Muthayya in his paper 'Rural Development : People Centered approach'. Mr. Muthayya rightly feels tha all these are important for not only furthering the objectives of development but also to bring about the development of the people and starting small-scale industries in the rural areas.

Dr. Ram K Vepa's optimism in regard to the establishment of District Industries Centres, to basically bring administration to the people at the grass-root level, is not misplaced, because it is a practical step to decentralise powers to enable an entrepreneur to deal with only one agency to get all his requirements at one place, instead of many under the previous set up The success of this institution will, however, be assessed only after it has been seen how the State Governments support it and to what extent the political entrepreneurs feel enthused by this institution

Papers by Mr. Rondinall and Mr. Ruttan suggest principles and methods for rural development, but these have to be applied with special reference to conditions obtaining in India

This issue should interest planners, potential industrialists concerned with rural development and executives in Government and industry.

—**B. S. Jain**

BOOKS RECEIVED

1 Technological Forecasting · P K Rohatgi, Kalpana Rohatgi, B. Bowonder Tata Mc Graw-Hill Publishing Co., New Delhi.

2 Things of Beauty by Vidya Dehejia. Publications Division.

3 Human Capital Formation and its Utilisation by Autar S. Dhesi, Sterling Publishing (Pvt.) Ltd., New Delhi

4 Growth Process in Ghazipur by Kripa Shankar, Arthik Anusandhan Kendra, Allahabad.

Grain Yield—A Record

FOODGRAIN production has touched a record 130.5 million tonnes in the current agricultural year. All time highs have been achieved in both ... and rice, 34.7 million tonnes of wheat and ... million tonnes of rice.

... the first time the country has crossed the 130 ... mark in foodgrain production, a significant ... ne in our progress in enhancing production.

Th... wheat production of 34.7 million tonnes is ... that of 1967-68, the first year of the introduc... of the high yielding varieties programme.

The coarse grain production this year is estimated ... 80 million tonnes and that of pulses 12.01 million ...nes—representing slight increases over last year's ...duction. The total foodgrain production last year (1977-78) was 125.6 million tonnes. Wheat procure...nt so far exceeded 7.6 million tonnes (which is also ...ecord).

Village Industries Output Up

THE output of khadi and village industries was valued at Rs. 257.43 crore in 1977-78. It represents a 13 per cent increase over the previous year. Of the total output, khadi contributed Rs. 64.89 crore and village industries Rs. 192.54 crore. The sale also increased from Rs. 227 crore to Rs. 257 crore.

The increased production led to more jobs in the rural areas. During the year, full-time employment rose to 24.16 lakh persons against 20.25 lakh persons in the previous year. Of this, 23 per cent (5.56 lakh persons) belonged to the scheduled castes, scheduled tribes and other weaker sections of society. The share of women in the total employment worked out to 10.78 lakhs or 45 per cent.

OUR ACHIEVEMENTS

...dustrial Growth Rate Up

THE index of industrial production upto February 1979 shows that during the 11 months of 1978-79, Industrial production rose by 7.7 ... cent. Despite various constraints several indus...s have recorded a significant growth rate during ...78-79.

...Sugar, scooter tyres, C.I. spun pipes, zinc, lead, ...ged handtools, agricultural tractors, diesel engines ... vehicles, agricultural tractors, mining machinery, ...per and pulp machinery, cement machinery, dry ...ls, commercial vehicles, jeeps and motor cycle in...stries registered a growth of over 25 per cent.

Growth rate of 10 to 25 per cent was achieved in ...ustries like vanaspati, infant milk food, salt, giant ...cycle tyres, tractor tyres, phosphatic fertilisers, ...lon filament yarn, soap, razor blades, machine tools, ...wer transformers, storage batteries and electricity ...eration.

Aluminium Output Up 20 Per cent

PRODUCTION of aluminium in the country recorded a 20 per cent increase during 1978-79. The total production of aluminium during the year was 214,000 tonnes.

The target of production during the current year was likely to vary between 240,000 and 250,000 tonnes.

The long-term outlook for aluminium was bright as the Government had initiated the opening up and exploiting the east coast bauxite deposits. The demand for aluminium in the country during 1979-80 was estimated at around 325,500 tonnes, requiring the country to import the residual quantity.

Against the orders placed by the Bharat Aluminium Company Ltd. in 1978-79, a total quantity of about 22,000 tonnes was already in the pipeline.

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and
Published by the Director, Publications Division [illegible]



OUR ACHIEVEMENTS

International Award for BHEL

BHARAT Heavy Electricals Limited has been adjudged the winner of case study of the year (1978) award by the international Society for Development of Organisations, Malaysia.

The award is presented by the society to organisations which have experimented successfully with new concepts in management of human resources

Algerian Contract for EIL

ENGINEERS India Limited a public sector undertaking has secured a contract for extending consultancy services for the Hassi-Pimel Arzew gas pipeline in Algeria.

The consultancy services will cover planning, scheduling and monitoring and cost and financial control.

This is EIL's fourth contract and the value of all the four is estimated at 10 4 million

Large Reserves Of Magnetite In Bababudan

ENTIRE Bababudangiri range is found to be pregnant with about 3000 million tonnes of magnetite iron ore resources. The National Mineral Development Corporation (NMDC), started exploring the area in 1978.

Since the reserves are larger, these deposits hold the prospects for development on an even larger than Kundremukh where the resources are estimated at 1000 million tonnes, although on similar technical lines

A research project on the eco-system of Bababudan, sponsored by NMDC, is being studied by the department of science and technology. The huge reserves of iron ore, located in Bababudangiri range, now offer the feasibility of massive mining projects with corresponding advantages of the region and the State.

Exports on the rise

THE progress achieved in the field of expor is spectacular and interesting too.

Diamond and jewellery exports have made a l stride Diamond exports touched 88 per cent increa from Rs 231.04 crore in 1976-77 to Rs. 435 crore in 1977—78. Gems and jewellery worth I 426.72 crore were exported in 1977-78 whereas t figure stood at Rs 264.21 crore in the previous ye representing a rise of 77 per cent.

The export of pearls during the year rose by 14. per cent, gold-jewellery by 116.93 per cent, n gold jewellery by 29.75 per cent and synthetic stor by 35 91 per cent. In 1978—79 the exports of th items continued to show encouraging results. April—August, 1978 they were valued at Rs. 213 crore compared to Rs 157 29 crore in the correspon ing period in 1972

The outlook for capital goods export in the comi years is bright. In 1978-79 exports of such goo increased considerably, and those worth Rs 180. crore were exported during April—December, 19 against Rs. 138.26 crore worth of goods during t same period in previous year. In addition contracts f these goods as at the end of Jan., 1979 were valu at Rs. 812.60 crore.

The export of railway equipment also showed e couraging trends in 1978-79. About 15 MG die electric locomotives and spares were supplied Tanzania. Besides 30 coaches were exported to Ph lippines, 20 to Uganda, 48 to Taiwan, 50 to Vietn and four to Nepal

Substantial improvement has been registered in t export of Indian films, which earned Rs. 53.6 lakh 1977-78. Packet tea, tea bags, and instant t fetched more than Rs. 50 crore in April—Octob 1978 compared to Rs 20 crore in the correspondi period of 1977.

New markets were also found in the UK(inst coffee), in Saudi Arabia (gramophone records), Kuwait and Australia (walnuts karnels), in Hongko (curry powder and finished leather), in Yem (mango pulp), in Djibouti (Mango juice) and Iraq (Peanuts)

YOJANA

Volume XXIII Number 16
1 September 1979
10 Bhadra 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address : Yojana**, New Delhi. **Telephones : 383655, 387910, 385481 (extensions 402 and 420) Circulation :** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs.42. Foreign Subscription: One Year £ 2.70 or $5.00. Two Years—£ 4.50 or $9.0 Three Years—£ 6.30 or $ 12.50. Single Copy – £0.12 or $ 0.25.

Editorial

Application of Educational Technology

IN A country teeming with millions of illiterates any promise t hasten the elimination of illiteracy through innovative tools will hav an instant appeal. Educational technology holds out one suc promise It seeks to re-inforce the attack on illiteracy with the aid c radio, television, film, casette and computer. Apart from the lim ted objective of improving the quality of teaching in the existing edu cational institutions, it proposes to make a dent into the vast area c darkness where facilities for learning do not exist. Aided by UNESC and UNDP, the projects launched by the Centre for Educational Tecl nology (CET) during the last five years, have made the Centre "a viab institute with the capability of undertaking research into innovativ methods of learning."

The crux of the problem lies in the appliction of educational techno logy in the limitless field of non-formal education. The area and th people to be covered are so vast and varied in nature that investmen in educational technology will necessarily be stupendous Any proj ramme to bring within its orbit a sizeable number of illiterates will b ambitious in nature and entail increasing depedence on external ai which is also unlikely to meet even the minimum essentials. The reali of the Indian situation is such that unless CET gives a new orientatic to its technology, it cannot be the appropriate technology for the mass in rural areas Even in metropolitan cities it is not an unusual spectac to find television sets in school lying unused for days together becau the mechanic has not turned up to remove the fault. The televisic sets supplied for community listening have a worse tale to tell. In rur areas replacement of radio batteries and spares meant f community use is a formidable job Unlike the advanced countri the environmental intelligence is not adequate to maintain the servi locally The graduated lessons become unintelligible to the learners proportion to the number of days required for removal of the mechanic fault or replenishment of the batteries and spares through cumbro official procedure Granting that these loopholes would be plugge there is no knowing that the lessons imparted through the gadgets w be able to touch the low level of intelligence and understanding of t illiterate audience

In the context of the current situation it is worth considering the appropriate educational technology could be the educational fil carried in mobile vans, accompanied by a teacher recruited from t locality to be visited and equipped with necessary tools like easy rea ing material, intelligible charts, better type of blackboards and colour chalks These will be the appropriate ingredients for the educatio technology. Even if the new learners fail to comprehend the slow-movi educational films at one go, there could be repeat exhibition of t incomprehensible to reach the level of comprehension. The presence the teacher to answer the questions which remain unanswered in the fi session would give a real feedback from the learners to the educatio technology The modus operandi of the field publicity units of t Central and State Governments who move with their vans to remote a inaccessible areas could profitably be studied to make this approa through films more effective.

It cannot be denied that educational technology, as is being chalk out, is capital-intensive. What the country needs today is labour-int sive appropriate technology. Unemployment is growing by leaps a bounds both in urban and rural areas. Of these the educated unen loyed present the most explosive problem to the society. They v have to be gainfully employed. Only the educational sector can of them the maximum number of berths. Desspite sophistication, borrow skill and increased foreign aid, educational technology can ill-afford ignore the reality of this massive problem requiring immediate att tion. □

Philosophy of Educational Technology

Shib K. Mitra

Director, National Council of Educational Research And Training

THERE is a philosophy for everything and therefore, there should be a philosophy of educational technology also. Philosophy, otherwise, in the technical sense of the term, is rather abstruse and difficult. Educational Technology, generally, means the application of technology to education in order to further the cause of the later. By and large, it means the use of radio, T.V., film, cassette, computer and such other technologies which can help individuals to learn on their own. They really do not 'instruct' like a book or a teacher does. But, they do provide an experience and a situation in which learning can take place. With the rapid rise of electronics-based industries in the field of communication, the field of education has been opened up to the possibilities of utilising these new communication technologies, because communication is the very basis of all education. Hence, we find it is only in very recent times that educational technology has suddenly emerged as an area of work, not only in the field of education, but also in communication and industry.

Formal School Vs. Educational Technology

Those who are concerned with educational planning and development of education, have noted that, there is a fast rate of growth of population, there is increasing emphasis on equalisation of educational opportunity and democratisation of educational, and there is an increase in pressure on the national budgets of all countries to spend more on education. All these facts lead to one conclusion that facilities for education will have to be expanded at a rapid rate, but if one assumes the linear model of formal school education, not only will the costs go up at a steep rate in order to keep pace with the growing demand, but also fail to provide the facilities for all, leading to growing inequalities and imbalances. Hence, planners and other thinkers are searching for alternative in education. It is in this context that the importance of educational technology can provide learning experiences, of various kinds, at various times, in various forms, to suit a large variety of individuals and groups, who need such facilities of education, which cannot be otherwise provided through the formal education system. By opening more and more schools of the usual variety, it is obvious that we will only increase the cost of education without solving the basic problems of the non-enrolled children, the drop-outs and of the youth who do not find such education as are provided in the schools as giving them knowledge and skill required to enter the labour force immediately on completion of school. Hence the search for alterantives has led among other things, to non-formal education and educational technology. Educational technology in the formal system can reinforce instruction that is offered and reinforce the learning that is desired. It can help the development of special interests outside the formal sysetm. Educational technology not only provides for individual differences but what is more important, it provides for education at a distance Distance learning system, as it is called, is a new development. But, the word 'system' indicates a technical aspect of the theory of educational technology, which means doing anything and everything that is necessary to develop certain kinds of learning, and to optimise the resources of learning available in a given area for specified purposes of learning. In this use of the words educational technology, the emphasis is placed on the technique of handling the educational situations so that there is least wastage of effort and input and the best return that one can expect in terms of specific learning outcomes. The use of hardware for improving education naturally falls within this wider meaning of educational technology. Somehow, however, it is the hardware which is receiving more attention than education.

The purpose of educational technology is to help individuals to learn better and more. It is not, however, independent of cost. Efficiency of a system of learning has to be judged in relation to the cost, only when,

at a fixed cost, the learning outcome is better or more than one can justify the use of new teachniques. In this sense educational technology has to be concerned with the management of education and not only the entire system of education to see its cost-effectiveness but, what is usually done, it should also look at a learning situation and see how it can be made better in relation to the increase in cost. It may not be possible always to improve a learning situation without increase in the cost. So it is not just a fixed cost situation. One has to consider the proportionate increase in cost against the proportionate increase in learning, and it is only when the rate of increase in cost is relatively lower than the rate of increase in learning that one can feel happy with the innovation that is proposed. But any judgement in these matters is difficult because the long term effects as against the short term ones need to be studied (which is hardly done) and there are other factors, like the social value of the learning.

Cost

A question that is frequently raised is about the cost of films, T.V. and computer as educational technology. These are costly, no doubt, but one has to consider whether the purpose for which these technologies are used, can be achieved by any other alternative method, which is less costly. In many cases, one can point out that there are alternative ways of reaching the same result in terms of learning. But in many other cases, the experience which is provided by a film or a T.V or a computer cannot otherwise be provided. The cost of hardware should not be the only consideration in limiting its use. It should be considered whether the software that goes with it is of such a quality that the effect of the programme on the learner is good and without loss for sometime. In order to reach the masses quickly, there is nothing like these technologies for certain kinds of messages, of communication for giving information, and such other matters. But one is aware of our shortcomings in the area of software programming. It has not been possible for us to develop good programmes and programmes of different varieties. We have not been able to involve a large number of people in this task. It is, however, a new field in India and, therefore, perhaps it will take some more time. One can only hope that the basic purpose of educational technology will be maintained and there will be imaginative programmes to make the learning through these technologies worthwhile.

Right Use

A question that comes to one's mind is about the use to which the technology is put. There is a grave danger that educational technology may not be put to good use. The experience of many countries seems to indicate that the TV and the film have only encouraged degradation and perversion of the people. We know from well documented research how the aggressive and violent movies, whether in the threatres or on TV lead to violent behaviour among the viewers. A technology as such is neutral. But the potentiality of a technology indicates its possible misuse. A classic case is that of the technology of nuclear bomb. As a technology it can be useful to develop power in a family like ours. But the technology as such also indicates the possibility of developing destructive weapons to kill mankind, and this is what some countries have done. Similarly, certain kinds of chemicals and drugs can be used for human welfare and reduce the suffering of the people, but they also have the potentiality in them of being used for degrading the human mind and body, as have been witnessed in some of the concentration camps and other places during wars. Educational technology likewise can be used for brain-washing of the people. The media are so powerful that in the hands of a few persons in authority who control the media, these can be used to condition people's thinking in certain ways and lead to the devolopment of certain beliefs, prejudices and attitudes which can only lead to the satisfaction of the interests of the few who control the media and the establishment. The radio has been used for propaganda purposes, but films and TV having a visual component in it have a much higher attraction. In a very subtle manner, through indirect suggestions, the mind of any can be shaped in the directions desried by those few who prepare the programmes and broadcast these. This potentially dangerous use of educational technology suggests Government control of the media, provided the Govt. is amenable to control by the people; otherwise any Govt. can use these powerful media to carry on its own propaganda and make people believe that what ever is considered by the Govt. is right. Hence, it is desirable to clarify in the beginning the use to which any educational technology and any particular programme is likely to be used. One cannot easily solve the problem of who should control the media. Some way has to be found of involving people at all stages right from the beginning to the final use in the class room or outside, so that the interests of the people are safeguarded. But who are these people? In our country people are illiterate by and large. If only the elite are involved, they will see to it that only their interests are served. At least in education it should be possible to have committees at various levels of administrators, educationists teachers, producers, programmers, parents, students and other users. Only then educational technology can be meaningfully used to fulfil the problems that it has of providing education for all, according to the needs and circumstances of the individual learners. □

An Institution with a difference

CET

Prof. (Mrs.) Vijaya Mulay
Principal, CET
(NCERT)

THE Centre for Educational Technology (CET) has been set up to promote the utilisation of Educational Technology for improving both the quality and coverage of education under Indian conditions. It is an instituiton of the National Council of Educational Research and Training (NCERT) and the Director of the NCERT is the ex-officio Director of the CET and Chairman of its Managing Committee.

In many ways CET and its position within the NCERT, is unique. There are altogether six institutions under the NCERT, two at Delhi viz, National Institute of Education (NIE) to which all the departments of the NCERT located at Delhi belong, and the CET. There are also four Regional Colleges of Education, which are located at Ajmer, Bhopal, Bhubaneshwar and Mysore. Only the CET has the distinction of having the Director, NCERT, as its ex-officio Director and Chairman.

Further, by a special resolution of the Executive Committee of the NCERT, which met on March 30, 1973, the scope of CET's work is extended formally to "Education at all levels and in all its aspects" The resolution adds, "Thus it (CET) should deal with pre-primary, primary, secondary and university Education, out-of-school Education, Continuing Education, Ault Education, etc. Among other methods, the Centre should also be concerned with Correspondence Education and Graphic Arts". No other institution of the NCERT has been assigned such a wide scope.

The Executive Committee had also recognised that if the CET has to work on finding new path-ways to learning which would be optimally efficient, it must have creative people and the best talent available from all over the country should be attached to the CET

The Executive Committee of the NCERT in its resolution at its meeting held on September 4, 1972 freed the CET from some constraints under which other institutions of the NCERT operate. It has directed that while the CET would function within the framework of the articles in the Memorandum of Association and the rules of the NCERT, the Managing Committee shall have powers to take decisions within the framework mentioned above, in respect of any of the provisions contained in the regulations of the NCERT, and that its cadre could be a separate one. The CET was also directed to operate its own account.

The Education Ministry which funded its setting and obtained aid from the UNDP/UNESCO in terms of experts, equipment and fellowships also accepted this fact and, therefore, it provided consultancies as part of staffing of CET in its assistance to the Centre.

There were indeed bold decisions of the Executive Committee and it created a bit of a furore in the beginning Anything which does not fit into an existing pattern is looked upon as oddity. This discomfort also sometimes has overtones of fear that its success would pose a threat to the exising practices. Some of the decisions of the Executive Committee have been watered down but the CET has been able to function with a modicum of autonomy within the general framework and has been able to break new grounds in many areas quite creditably.

What are the areas in which the CET has been functioning and what are the future tasks ? People tend to think that Educational Technology is like audio-Visual aids except that when we called it Audio-Visual education, we talk of TV, Radio, Computer-assisted Instruction, etc. Actually Educational Technology means much more than audio-visual aids.

12DPD/79—2

It means designing learning systems which would be efficient in terms of cost, time and resources. It depends on available resources or potentially available resources. The stress is on learning and on self-instructional and programmed materials, which could individualise instruction. Any programme in Educational Technology would always be directed towards solving a specific problem. The inputs and materials prepared, unless they are for prototype research, would be related to a system, which is being designed or which is in operation. The whole programme will have to be need-based and be flexible enough for revision on the basis of feedback.

Since its inception in 1973, the CET despite being very under staffed, has experimented with one alternative learning system at micro (institutional) level using very simple technology and changing slightly the school curriculum and teaching methods. It designed another learning system for in-service training of teachers during the Satellite Instructional Television Experiment. Both have proved to be successful in terms of achievement, unit cost and coverage of large numbers.

The CET has undertaken training in areas which were hitherto not been touched or at best touched in a very sporadic manner. Small format video production, educational radio production, script-writing for education radio and television, film animation, seminars for explaining the System Approach and for drawing up a PERT Chart for a specific system, training teacher educators/ET Cell Officers/administrators in Educational Technology, etc.

The CET has developed multi-media package for in-service training of teachers, follow-up self-instructional materials and modules for teaching lesson-writing for correspondence courses. It has produced 12 films, ten of them in five to six language versions. Its very first film ("Ek Anek aur Ekta") won a Silver Lotus at the National Film Festival Awards and merit awards from Iran and Japan. Two other films have won awards at Tehran film festival It has produced 177 radio programmes using archival material from the All India Radio some of which have been broadcast on Yuvavani, in different languages. Now the CET's radio broadcasts for its Radio Pilot Programme for teaching Hindi as the first language are being transmitted from Jaipur and Ajmer AIR stations everyday. The CET has also broken new ground in utilising 16 mm technology in film-making.

The CET is essentially a research and service organisation. Once a learning system is proved efficient it is given out to the States for operating with such modifications as they may find necessary. Its materials including films are available to educational institutions at no-loss-no-profit basis.

In the future too, these functions will continue to be done. But one more function, which was on the cards but which the CET has not been able to execute very well uptill now is helping the States and other organisations build the infrastructure for using Educational Technology in different parts of the country. One Centre for such a large country with its wide variations of culture, problems, strengths and weaknesses will never be enough. This should be one of the main tasks in the near future The Education Ministry too is aware of this need and is proposing to extend its scheme of setting up ET Cells in all the States. Though financial assistance is necessary, even more urgent is the need for ideas and for trained personnel to resolve local needs in education with optimal efficiency.

The prospect of the population reaching the 950 million-mark by 2000 A D. and the general depletion of resources of paper, land for schools, etc. mean that the traditional system of one-teacher-one-classroom will just not be able to cope. The forecast is that there could hardly be paper for printing even text-books Electronic media, Distance Learning and Open Learning Systems, Self-instructional Programmes for improving functionality of a person, mini-courses, etc would have to play a major role.

The schools, colleges, and universities of the future will have to become learning centres and resource centres And since equality of opportunity is the birth-right of every citizen in a democratic country, these systems have to be as good or even better than the traditional system of education. We have only the next ten years or so to experiment in finding these new pathways to learning and for making education more efficient and relevant to the needs of the individual and society

Let us hope that the traditional patterns of administration would not act as a drag on these experimentations The advances in technology offer many new delivery systems Teleboard, which needs no studio nor cameras and Super 8 loops are important. The CET proposes to experiment with them. But even more important are the persons and a flexible system which would be responsive to the needs The ET is just a trickle of water in the vast sands. There has to be a network of canals and waterways of innovations through an Educational Technology infrastructure if the deserts are to bloom. □

Radio for Language Teaching

Professor, CET
Snehlata Shukla

FOR the last three decades, the nation has been struggling to attain the goal of universalisation of primary education. While the enrolment have doubled during this period and there has been a proportionate increase in the number of teachers and school buildings, the efficiency of the system does not seem to have improved very much.

Enrolment of the age group 6—11 has increased, but the rate of drop-outs has changed only marginally, if at all Even now less than 40 per cent of the students, who initially join school, enter class VI, 50 percent of the enrolments drop out by the end of the class II. Various causes of the drop-out have been identified of which economic and social backwardness of the communities has been very prominent Another cause of children dropping out from the classes I and II is their lack of interest in the studies.

The frustration of having to sit for four to five hours a day in a classroom, in which the child cannot take interest, and subsequently gain little, leads to his withdrawal from the school. Add to this the humiliation that the child might have to undergo as being marked incapable of learning anything in the school by the adult authority, that is the teacher and also the parents Psychologists say that the children are inquisitive by nature and like to explore and learn, but for some reasons, the conditions in primary schools do not facilitate this learning.

Basic skills that the children are expected to learn in primary school, specially in classes I to III are language and arithmetic. Reading, writing and speech to some extent because speech is learnt by individuals even outside the school but here they are taught specifically in an organised manner. The first language being the basic tool for further learning, if it could be learnt in a reasonable amount of time, it is likely that the children would get more motivated to learn other things as well.

Once the skills of reading (and also writing) are mastered, given a suitable environment, curiosity which is natural to the child should help him to probe further and acquire knowledge It is the experience of parents from relatively well-to-do homes in urban areas that children do not want to leave their reading even for play.

Some of the studies undertaken in NCERT have thrown light on the level of language learning in our schools. In an international study carried out in 19 countries using the same or similar tools for testing vocabulary and reading comprehension of children in their mother tongue, it was found that the 14-years old children studying in classes VI to VIII in the entire Hindi region could not read anywhere near the level that the children in the developed countries could. That the levels of reading are very different is further supported when the reading materials included in tests for testing reading comprehension in Hindi of children of class V developed in Department of Educational Psychology and Foundations of Education of NCERT were compared with the materials used in the international study The tests that got finalised in NCERT were far too simple, in regard to the length of the paragraph, the structure of the sentences and the idea content

In another brief survey made with the help of very simple reading tests in the metropolitan city of Delhi, it was discovered that 50 per cent of the children at the end of class I could not read a single word, 25 per cent of the children at the end of class II also got a score of zero on these tests. It was, therefore, obvious that a large proportion of children do not learn to read at all in the first two years of their schooling.

In connection with another study, to decide the grade in which group tests could be administered, the study team approached children in the Municipal Corporation schools in the outlying areas of Delhi with simple material written on the paper in bold types. The investigators invited children one by one to come and read that material. It was finally concluded by the team

that the children learn to read somewhat independently somewhere in the fourth grade. In this little trial, comprehension was not tested. It is also not known whether the children could have read material more complex than a simple story. The interest at that time was really in recognition of letters and words presented in Devanagri.

The reasons why children do not learn to read can be many of which one could be the manner in which the teacher communicate with the child. Is he|she is trained sufficiently (not by paper qualifications) to teach the learning of languages ? Can we assist this teacher from a distance by guiding him|her regarding communications to the children ? Attempts have been made to provide this help. Textbooks written for grades I to V by the NCERT for teaching the mother tongue were supported by guidebooks for the teacher, instructing him|her step by step what may be done. This textbook and the guidebook had been in circulation for almost 12 years. But if the guidebooks are not consulted by the teachers regularly, proper presentation of the material may not be obtained. We need to make sure that the children are guided suitably. Can we not use the media other than print ? Media which would reach the children more directly and also help the teachers in their day to day activities.

This is not to suggest that other media have not been harnessed so far to improve teaching learning situations in the classroom. To talk only of the radio, educational broadcasts have been in the field for the last 45 years. At present, 32 stations of the AIR are producing programmes for school children and teachers and 28 more are relaying these programmes. More than 6,000 programmes are broadcast every year to school children in various parts of the country.

More broadcasts are addressed to children from classes VI to XI|XII than to children studying in the primary schools, the ratio being 13:7. This is based on information from AIR where the categories used are primary and secondary. It is not known whether 'primary' is confined to classes I to V or I to VII|VIII. In recent past, educationists and broadcasters have realised that the primary school needs the most help and is also more likely to use the direct broadcast. There has been, therefore, attempts to introduce broadcasts for primary stage but the coverage is still limited. Also, within the primary school, almost all broadcasts are addressed to classes III to V. While there are general programmes like 'Chun Munn' broadcasts outside school hours for young children, broadcasts specifically for classes I and II are not available. One may safely conclude that the majorit of the programmes are addressed to students of secon ary classes. Of the programme broadcast to primai schools, most are prepared for children studying i classes III and above.

The reasons for greater concentration of broad casts to the secondary school are not well understoo Some of the possibilities could be: 1. The syllabi i the secondary schools are more defined and, ther fore, it seems easier to prepare school broadcasts o the basis of that; 2. So far the more powerful an vocal groups interested in secondary education hav managed to get away with larger share of resourc available in the area of education; 3. The educationist and the broadcasters have not grasped the importanc of the quality of education at the initial classes; 4 Broadcasting to the very young children seems difficul and gets excluded for that reasons; and 5. More c secondary schools are receiving sets and therefore i is meaningful to address the broadcasts to this audienc

None of the possible reasons given above are suc as should seriously hamper the growth of educationa broadcating for the primary schools. Being mor diffiicult may only be a perception of those who hav not had experience of working with the very young In any case, it can be more challenging. Non-availabi lity of receiving sets on the basis of funds not bein available does not sound like good economy considerin that a large proportion of children fall out of scho system without attaining the first minimum of literac Extending programmes of literacy to these childre later on would be more tedious and more expensiv than retaining all children in schools till they can rea and write well.

Also it is known from experience of utilisation c radio and TV in other countries that fewer secondar schools use communications directly from the ma media. For example, in Japan, 92 per cent of primar schools are reported to be using telecasts in compariso with 49 per cent of secondary schools. One of th reasons forwarded by the secondary school teachers their inability to keep to the right schedule necessar for synchronising their teaching with media teacher This difficulty is felt in secondary schools as the sy labi are more discipline-oriented and highly-structure In many disciplines, communications (Teaching) h to be in a particular sequence and a broadcast whic does not fit in properly cannot be utilised gainfull The curriculum in primary schools is not so tight sequenced, thus permitting better utilisation of th mass media.

We felt that the primary school should be the main target of intervention by this medium. A number of reasons have led us to this decision : 1. The beneficiaries would be larger in number; 2. The primary school has always been reported else where as more receptive to the mass media like radio and television than the secondary school; 3. We need to strengthen the quality of education being imparted in primary schools. Also learning of the mother tongue should be given the maximum help in the beginning stages of education. This basic tool once acquired would tend to have a multiplying effect.

Considering various points mentioned above a pilot Project in 'Teaching First Language' (Hindi) with the Help of the Radio' has been undertaken by the CET (NCERT). The aim is the improvement of language learning in primary schools. It starts with the fresh entrants to class I during the school year beginning in July, 1979. The experiment is confined to 500 primary schools of 15 Panchayat Samitics in the districts of Jaipur and Ajmer in Rajasthan.

All the skills of language, speaking, listening, reading and writing are being emphasised in this project. One of the main communications in the project to the teacher concerned is that children enter school with different levels of competence in all the four skills mentioned above. They can speak, they can listen meaningfully to ordinary day-to-day conversation, short stories, simple directions, etc. but, most of them cannot read. Very few have had the experience of writing of any kind.

The new entrants to schools, therefore, have different points of achievement in the four skills and may also have different rates of growth regarding various aspects of language. The receptive skills of listening may increase at a more rapid rate than speech. Similarly, even when both start from the zero-point, reading skills may grow much faster than writing. In any case, one needs to acquire a higher level of receptive skills to imbibe all that is available in the environment. Every one does not need to acquire the same levels in writing or even in speaking.

It has been noted, that as at present, the teachers have not imbided these simple differences with regard to language teaching. Reading speed and facility are held back till children learn to formulate letters. As mentioned earlier, there is hardly any direct effort towards improvement in speaking and listening. To achieve all these objectives, materials, media and techniques will also have to be varied, compared to what is now available in schools.

Another aspect that is emphasised in this project is Language Development. There is little appreciation in the school that at this stage, a planned programme for language development is needed. The children cannot read as yet, in their limited environment where scanty material is available to them and there is little interaction with adults. There is not much chance of optimum language development. The language teacher is expected to teach reading, writing, listening and speaking.

At present, in most places, there is a book available for teaching language. In best of circumstances, it has provision for stimulating conversation, pictures and pages to prepare children for reading and writing as well as material to learn to read and write. Frequently, the book is followed by the page by teachers, with learning of one aspect (e.g. writing) holding back learning another skill (e.g. reading). To avoid this kind of confusion, separate opportunities are provided for development of various skills. There is print material to facilitate reading, work-books to facilitate writing, radio programmes for developing skills in listening as well as for enhancing language development, pictorial materials and other activities by the teachers for improving speaking. This is not to suggest that all these media and materials are independent of each other following different directions but that the major part of help for attainment of a particular objective may be drawn from some materials and approaches.

Radio, specifically can provide opportunities for developing listening comprehension as well as improvement of vocabulary, proper intention prounciation and formalities of speech.

The primer for reading concentrates on teaching reading. We believe the same book should not be used for teaching both reading and writing. In reading, meaningfulness of the material is important; one does not necessarily have to pay attention to the letters, the words are seen as wholes (later on even phrases and sentence may be seen as wholes).

But , in writing, the letter is the unit. Complexity of the structure of the letter may guide the beginning points of writing. It could be more meaningful to adopt different approaches as well as different material and different routes to learn the alphabet for reading and writing.

12DPD/79—3

In this experiment, there is a daily radio broadcast of 15 minutes duration addressed to children of class I in the first year. The broadcast will be addressed to classes I and II in the second year and I to III in the third year of this experiment. In the beginning of the school year the radio is being used for making the school a worthy place to come to. It tells stories to the children, sings rhymes for them, teaches them rhymes, asks them to play games according to the instructions given on the radio.

After six weeks, the radio programmes have moved towards language development by adding words into the existing vacabulary of the children. It also aims at developing listening skills. In the coming years, the radio will also help in learning correct pronunciation and proper intonation. Since a number of characters are used in production of programmes, it incidentally teachers etiquettes of speech.

Educationists, psychologists and producers sit together to decide what should go on the radio and the format in which it should be presented. Creative writers are then invited to write scripts towards clearly mentioned objectives. The scripts when received are checked for accuracy of language as well as suitability of content for the target audience. It is only then that the producer starts his work by recording artists for production. One specialist in language sits during production for guiding the producer regarding pronunciation, intonation, etc Programmes produced are frequently listened to by the project team and the Faculty of the Centre for Educational Technology and critically evaluated.

Several programmes in the beginning were taken out to the field, played back to the children and their reactions were watched The chilldren participated whole heartedly in playing simple games according to the instructions given on the radio. The tryouts also instructions given on the radio. The tryouts also suggested some do's and don'ts and the same have been implemented in the production of the programmes. All the programmes are not tested in the field but quite a few are. These field trials affected future programmes. All programmes in this connection are produced at the CET, although bits of programmes are borrowed from the AIR library also. The Akashvani Station of Jaipur broadcast them to the schools.

Other materials consisting of picture cards, word cards, books for reading and writing plus a small library of story-books are also being supplied to th schools. Even though all the materials are planne and provided from the CET the role of the teache in the classroom is crucial in the experiment. Materials may be very well designed and creative, thei actual presentation and interpretation remains in th hands of the teacher.

It may be emphasised that on the basis of the earlier experiences in the field, it has been the effort ir this project to plan the programme and materials i such a manner that the same can be received/utilise by the children even if too much help is not added to them. For example, the radio programmes are relatively independent of the pre—and post— broadcast activities of the teachers. Repetition and recapitulation are built into the programmes. Most programmes leave instructions then and there as to what should be done by the children and the teachers as continuation activities.

The books for reading and writing have instructions for the teachers but the same are printed on each page of the book avoiding a separate book of instructions for the teachers. Still, the orientation of the teacher regarding the background of the scheme, the objectives to be achieved and their role in the teaching of language was considered an essential part of the programme. Towards this purpose a two-week training programme was organised for all the teachers who would partake in this project.

A number of administrators have also been oriented with the scheme. They would help with monitoring and evaluation of the project which will also be seen as continuous activity in the project.

Regular monitoring of implementation of the programme in the schools will be carried out by the officers of the CET Delhi, ET Cell Jaipur, B.D.Os, S.D.Is and other officers of the Government of Rajasthan. Observations will be fed to the CET for necessary action whereever needed.

Teachers are also being encouraged to send their reactions to the CET/ET Cell. It is proposed that at the end of each year a few teachers will be interviewed regarding the suitability of the material designed for the children.

Contd. on page 33

Educational Television

R. R. Sharma
Reader (ETV) Training

IN 1973, the NCERT decided to set up the Centre for Educational Technology as an Institute of the NCERT. The concept of Educaonal Technology means the sum total of all educaional facilities, media, methods, and techniques for ptimizing learning. The Centre for Educational 'echnology started working in different areas in order) achieve the desired goals. Different units were set p under CET, but with active coordination of ork among such Units. One of the units amongst thers was Educational Television (ETV) Unit to ork and ensure the effective use of the mass medium, elevision, in education, for improving the quality of ducation at all levels, to expand educational facilities, articularly in rural and backward areas for formal nd non-formal systems and to make education intersting to the learner and thereby reduce wastage i.e. ropouts in the educational system. Before we discuss he attempts made by CET for improving the quality f educational television programming in India, let us ce its grwoth and present status in the country.

History

The first experimental television service in India was inaugurated in Delhi on September 15, 1959. Later on experimental service for educational television was started but the regular educational service for schools n Delhi was launched on October 22, 1961. For eleven years educational television did not see any expansion. However, the expansion started from 1972 onwards. In 1972, ETV programmes started from Bombay followed by Madras and Srinagar stations of he Doordarshan. However, TV facilities exist at several other places such as Calcutta, Amritsar and Lucknow.

A new era in the history of television in India, started in 1975 when the Satellite was used for a year on an experimental basis for instructional purposes. This experiment was carried out in six states of India namely Karnataka, Andhra Pradesh, Orissa, Bihar, Madhya Pradesh and Rajasthn. Greatly influenced by the success of the experiment, the Government of India decided to continue feeding programmes to these areas by setting up ground transimitters. Not only this, we are getting reday for the use of another satellite, the INSAT, to be launched in 1981.

Functions

Keeping in mind the growth of Educational Television in the country and the needs and requirements for effective utilization and quality programming, the following functions of the ETV unit have been identified :—

1. Training of personnel to design, develop and promote utilization of educational television.
2. Production of prototype programmes.
3. Carrying out research and experimentation to test and improve systems, methods and materials.
4. Providing information, resources and consultancy services for enhancing efficiency of educational television system.
5. Working as coordinating agency with other organizsations and institutions working in this field.

In view of the functions assigned and the role set out for the ETV Unit, several activities of various kinds were planned and carried out. Of these, the following are the major ones and are, therefore, worth mentioning :



A CET technician surrounded by the "Hardware"— a video tape recorder, a slide cassette recorder and an audio-mixer.

The Satellite Instructional Television Experiment, popularly known as SITE was a landmark in the history of Indian Television. The Educational input from Satellite was confined for one and half hours every day, and was beamed for students of primary classes in 2400 schools in six SITE States. The programmes were transmitted in four regional languages of states and as such it was a 22½ minutes programme for children in each of the four regional languages.

The Centre for Educational Technology played an important role in this experiment in the following areas :—

(a) A conference was organised in 1974 of the representatives of the six state Governments, All India Radio and educationists to discuss and finalise the approach and content of television programmes for children in primary schools. On the basis of the recommendations, a curriculum was designed and the list of topics with some details was finalised, which formed the basis of the educational programming for Satellite television.

(b) The next important task was the training of teachers for the optimum utilization of TV programmes in the class room situation. This responsibility was also shouldered by the CET. In this direction the CET organised the following training courses :—

(i) Training of Resource persons of six SITE states, who in turn organised training courses for 2,400 user teachers. This training course was organised at Pune in collaboration with Film and Television Institute of India. In this course, resource persons were exposed to the various formats of the television programmes and the importance of pre and post-telecast were highlighted in order to have the proper impact of the programmes. Trainees were also acquainted with the physical conditions in a class-

room i.e. lighting condition, placement of TV Set, its height in respect of viewers eye-level and the distance of TV set from first and last row of students in class, so as to make the viewing confortable.

(ii) CET officials also helped the Resources persons who trained 2,400 teachers in utilisation of television programmes. This training was arranged in different schools. Trainees were asked to do simulation exercises in respect of pre and post-telecast and arranging other viewing conditions as the special broadcasts were arranged for the training purposes.

(c) It was also felt that there is a dearth of good script writers for young children. The CET, with the help of its own staff and other experts in the field working outside, designed a manual for the training of scriptwriters and organised several short-term courses for ETV script writers in order to provide a pool of trained writers at each of the base production centres of AIR at Delhi, Cuttack and Hyderabad.

Multi-media Package

One of the major problems in the Indian Educational System has been the problem of training and re-training a very large number of primary school teachers efficiently and economically. The CET was entrusted with the task of seeking a solution to this problem.

Therefore, attempts were made to develop an alternative system by making judicious use of the various mass media. Consequently a Multi-media package for the in-service training of primary school teachers was developed by the CET.

The mass media used were television to demonstrate the new approach to science and pedagogy; radio to carry content of topic, but in a more general way than is given in text books, and to motivate teachers; print in the form of activity guides which would help the teacher conduct experiments and activities in this class-room, using materials from the environment and enrichment material which would give him more information on the content units; and interpersonal communication provided through a specially trained teacher monitor who acted as the resource person for guiding and conducting the programme, holding tutorials and making up in general the deficiencies of one-way media like TV, Radio and Print.

The multi-media training module consisted of 12 films in four language versions, 10 radio and two radio vision programmes in four language versions including posters and flash cards for radio vision programmes. Activity guides with about 140 activities on 12 science topics, which could be performed by using low-cost or non-cost equipment-enrichment materials on 14 topics; fail-safe materials for each of the film and radio programmes so that in case for some reason the TV or radio broadcast could not be heard on a particular day, the teacher monitor could use them in lieu of the programme. In addition to this, the CET prepared a hand-book for teacher monitors in two volumes giving detailed guidance notes for television and radio programmes and other necessary information.

Using the infrastructure available under SITE, this package was operated for 12 days in October, 1975 and 22,000 teachers were trained at 2,400 selected centres in six SITE states.

Systematic feed-back on the efficacy of the various inputs of the training programmes was obtained from teacher monitors and also from specially appointed investigators. The evaluation study revealed a positive change in teachers' attitude towards experimentation in the class room and an over-all gain of 10 per cent in their knowledge of content of science which is quite significant With regard to preference to the media, TV was received best. Teachers said TV programmes were the most useful part of the programme

On the basis of the feedback, the course was re-designed for 15 days and one TV programme and three radio programmes were modified. More activities were added and enrichment material were validated and revised accordingly. The modified module was again operated for 15 days in July, 1976, and 24,000 primary school teachers were trained at various centres in the six SITE states. The package was again evaluated and the report was found to be very encouraging.

The training package has since been demonstrated in various states of the country and looking at its potential several states are using this package either

as a whole or as a part of in-service trainnig for teachers in primary science.

Training of Scriptwriters for ETV

The need for developing competences in the field of writing for Television has been as old as the advent of television in India. This was more felt during SITE. Since SITE was a time-bound programme, no long-range stress could be laid on this aspect. To meet the demands of SITE, the CET organised several short-terms orientation courses, for scriptwriters. After the SITE, the need for starting periodical and more intensive training courses was felt due to the coming up of many new television centres in different parts of the country. After a discussion with Doordarshan authorities, it was decided that the task of trainnig scriptwriters for educational television should be taken up by the CET.

As a result, the CET planned a 10-week intensive programme in ETV scriptwriting. A course outline and a manual had been developed for the training course One such course is organised every year in which 20 persons from different parts of the country participate. Besides this intensive training course, three short-term 15-day orientation courses were organised every year for different Doordarshan Kendras. All training programmes were organised with the active collaboration of Doordarshan Kendras. The follow-up reports were encouraging, as most of the writers trained in our programmes were doing a good job at various Doordarshan Kendras.

An orientation course for 15 days is organised every year for the writers trained earlier in 10-week intensive training programme. The purpose of this course is to bring together all the scriptwriters so that they could have an exchange of their experiences and also to acquaint them with latest techniques, skills and developments in the field of educational programming. During the course, they also develop scripts. This helps us in developing a series of programmes for prototype production.

The work relating to the development of curriculum and preparation of materials is under way. We propose to undertake one course each for presentation from 1980-81 and for programme producers from 1981-82.

A three day course has been designed for the training of teachers in utilization of TV programmes in class rooms. The CET organises such training courses for the resource persons of different states as and when such requests are received from any of the states.

Training Courses in half-inch video production

Having identified the country's wide need for offering a training course in half-inch portable video production for the personnel of such institutions as are either already working or propose to start working with half-inch portable video in the future the Centre for Educational Technology organised a 10-day traning course. This course was organised using the training package that the UNESCO had got developed by some video experts from Fantasy Factory, London.

The major objectives of this training course are : -

(a) To help the trainees acquire a basic working knowledge of the theory and practical of the portapack based video production.

(b) To enable the trainees organise and undertake a small scale independent video production.

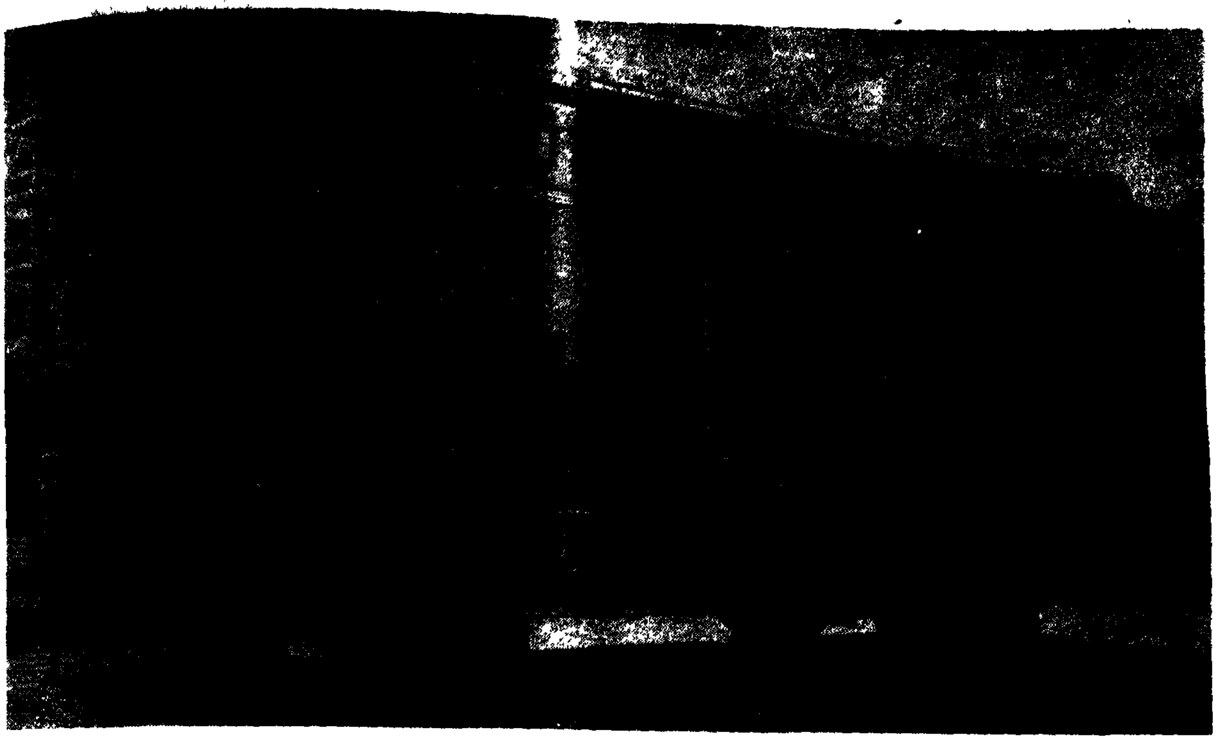
Judging from the success of the course and its need CET would be organising one such course every year

Till now the CET has no television studio facilities, except the half-inch portapak units. For all our training programmes we were using half-inch portable equipment or studio facilities of different Doordarshan Kendras. However using half-inch portapak we produced a few programmes. Although no major breakthrough has been made in this direction, we hope to start working more vigorously in this area

TV Recording Van

With the acquisition of a new, made-to-order, TV Recording Van, the Centre for Educational Technology, NCERT, has achieved a break-through in sophisticated technology. Now the CET has at its disposal complete TV programme production facilities mounted on wheels. We now propose to produce proto-type TV programmes and undertake research projects in different fields

The TV Recording van is equipped with three electronic Plumbicon cameras. a video mixer, a special



With the acquisition of a new, made-to-order, TV Recording Van, the CET has achieved a breakthrough in sophisticated technology.

effect generator, an audio mixed and picture-and-sound monitoring unit. The van has a one-inch dual video tape recording console. It has intercommunication systems between the producer, the floor-manager and the cameraman.

The TV Recording van, specially airconditioned to suit tropical conditions, is a self-contained mobile production unit, which can be taken to various locations.

A specially designed 25 KVA three-phase generator mounted on a trailer will soon join the van to enable shooting in remote areas, where electric connection facilities are not easily available

Research and evaluation studies

Research in the field of television is still in its infancy in India The FTII, Pune, has done some research work in this area particularly for young children There is, however, a great need for taking up more research projects and evaluation studies in educational television so as to show up the way for effective programming by different existing and up coming Doordarshan Kendras. The ETV unit of CET has planned to undertake a few research studies to find out effectiveness and suitability of different kinds of formats of ETV programme for different age-groups and thus ensure effective communication in formal and non formal education The research studies could not be undertaken in the absence of TV production facilities in the Centre. But with the acquisition of the TV Recording Van it should now be possible to undertake several need based research projects in order to provide guidelines for future programme producers.

Software Bank

The Centre is developing a Software Bank which consists of various materials including programmes on audio, video and film. There are a number of institutions working in the field of educational television programming in the country, but they are hardly aware of each other's work. The objective of this bank is to collect programmes from all sources, national and international, and to disseminate the same to various institutions and act as a nucleus. In future, it has been planned to collect different kinds of film clips, music, sound effect etc. for ready use by programme producer.

Consultancy and information services are provided to various institutions and individuals in respect of ETV curriculum development in teacher-training institutions, scriptwriting, production, makes and utilization of ETV programming on a continuous basis. ☐

Children Media Laboratory

Dr. Rajlakshmi Murlidharan

THE focus of the Children's Media Laboratory set up with the UNICEF assistance at the CET, National Council of Educational Research and Training is the young child in the age-group of three to eight years. For this young age-group, perhaps the most crucial one from the point of view of child development and achievement, we have very little of well-sequenced and entertaining materials.

The majority of our children come from disadvantaged homes and do not receive much stimulation They are in need of joyful and entertaining experiences that will help them in later development and achievement. Primary schools at present are also as drab and dreary as the homes and children find learning there boring and meaningless. Very soon, they stop taking interest and drop out from the formal school stream. Much work needs to be done in making learning a joyful activity so that children continue to remain in school and take interest in learning.

The main aim of CML is, therefore, to introduce a measure of joy in children's learning. It has been set up with the specific objective to develop or discover inexpensive, nonformal and effective media of educational and entertainment value for children in effectively conveying the information, skills and attitudes that will enhance their life opportunities.

Generally, speaking, the programmes of CML fall into four categories:

1. Educational Play Materials.
2. Print and Graphic materials.
3. Radio Programmes.
4. Projected Aids.



A still from 'khilone' a colour film on Indian toys specially made for the International Year of Child.

Much of the drabness in learning that exists today can be minimised if the teacher resorts to the play-way method of teaching-learning. But this possibility is soon ruled out as it is often the view that play-materials are too expensive, for the school to afford. The CML, therefore, took up the project to locate the existing toys and games that are prevalent in a particular state and to spell out the educational potential of these materials.

These projects have been done in the States of Karnataka, Gujarat, Tamil Nadu and Bihar. The projects started with a systematic and exhaustive survey of the materials, followed by the development of a manual for teachers. The last phase of the project is a workshop where the teachers are acquainted with the manual and are given opportunities to develop their own toys and games using locally available inexpensive, raw material.

It is our finding that there is a variety of inexpensive and attractive play-materials that are available in the community. Unfortunately, in many cases, the schools have not tapped the educational potential of these raw materials as they have remained isolated from the community, its toys, activities and games

The colourful wooden toys from Chenna Patna of Karnataka, the scientifically planned clay toys of Pathan of Gujrat State, the traditional Navarathri dolls of Tamil Nadu, the funny acrobat dolls of Bihar are all instances of the wide variety of toys that we have in the country. Besides these traditional toys, we have also now a good number of manufacturers of educational play-materials. Their materials are more expensive but they are certainly more durable and sturdy. The teacher's manuals that have been prepared under this project cover both the traditional and the modern materials. They also give suggestions on how to improve the available toys and to devise new toys out of locally available materials

Workshop for teachers

Another activity in this direction is to hold regional workshops for teachers on devising low cost and simple play materials and games for young children. In all workshops, the locally available raw materials are used for the development of toys and games. Teachers are given training in preparing their own materials for developing in children concepts of number, colour and form, developing health habits in them making a variety of puppets and using them with children, developing language games, etc The teachers certainly enjoy the programmes and participate whole-heartedly. It is the hope that they will transmit this enthusiasm in their day to day class room teaching as well.

Print and Graphic Materials

Our research studies have shown that Indian children experience a great deal of difficulty in learning to read. In many tasks related to reading such as recognition of pictures, discrimination of forms, auditory discrimniation, etc our rural children are found to lag behind considerably. It is also seen that facilities for language development at home, such as provsion of books, magazines and pictures help children to achieve better in school.

Most of the materials that are available today are for older children. Hardly anything is there for the young children in the age-group of three to eight years Keeping the research findings in view, a set of ten picture books has been developed in Hindi under the CML project to develop children's interest in reading and to help them to learn to read better These books have been developed, tried out and evaluated by our staff. The books are of two difficulty



The 16 mm Neilson Hordell JuniorAnimation Camera and Stand, the first of its kind in India.

levels, the simpler one-sentence type and the other with more reading content They are colourfully illustrated and printed in bold type. They are expected to serve as read-aloud books for the preschools and beginning readers to the early primary school children. The books also carry instructions to the parents and teachers on how to use these books and what related activities they can organize for the language development of children

Materials for Parents and Teachers

How the child will shape in later years, depends to a great extent on his early childhood experiences. Young children need to be not only fed, bathed and dressed but also need to be talked to, fondled and played with. Every part of India has a rich tradi-



A section of toy collection with the CET

ion of mother-infant games, songs and stories but he present-day mothers do not unfortunately realise he importance of such inter-action and generally find t difficult to take time off to play with children.

A set of ten pamphlets, well-illustrated and written n simple Hindi, have been developed under the CML Project, giving suggestions guidelines and hints to arents and teachers on how to organise the right ind of experiences for young children and spell out he activities that can be undertaken by them for ptimising the development of children The themes ealt with in these pamphlets include story-telling, nusic and games, creative activities, puppetry science xperiences etc. The suggestions given are of such ature that most of these activities can be undertaken y parents in their day-to-day living

Collection of children's songs

"Bal Geet" is a collection of about 100 rhymes nd songs for children in Hindi and can be used at oth preschool and primary school levels. This publiation is brought out in collaboration with Mobileeches of New Delhi and is brightly illustrated by the hildren of migrant Rajasthan unskilled workers.

Radio Programmes

The radio component of the CML has two major activities :—

1. Monitoring and evaluating the appropriateness of the current broadcasts for young children.

2. Developing programme prototypes suitable for the age-group of four to eight years.

Under the first activity to begin with, monitoring panels are being set up to monitor systematically the Hindi programmes broadcast for the young children Monitoring involves organising listening groups of children and observing their reactions systematically over a period of three months The monitors are first given an orientation in observing and recording, after which they continuously observe children and record their reactions in proformas prepared for this purpose.

So far, monitoring has been completed for the

programmes broadcast from Delhi and Patna Stations of the AIR while it is underway for Simla. The trend of the report is that the programmes for young children broadcast, generally consist of songs, stories and conversation. Monitors are of the view that though children enjoy these programmes, they need to be improved so that there is more scope for child participation The programme content also should be more simplified so as to gear it to the needs of the young child.

The next component is the preparation of radio prototypes The prototypes are developed keeping in view of the fact that children at this young age are active and have a short listening span. The programmes call for active participation not only from the children in the studio but also from the listening ones. They include activities such as games, action songs and stories

Projected Aids

Projected Aids, compared to the other media, are expensive It is also difficult to reach them to children Of course, there is no question about the greater impac they have once they reach children but in the presen circumstances bottlenecks in distribution are tremendous. Therefore, only limited work is done under CMI so far as projected aids are concerned.

A film on the development of curiosity "Kishan anc the Magic Chariot" has been done which depicts the natural curiosity of children and how it should be fostered Another film which has been done is or Indian toys "Khilone" It is a delightful film on the colourful Indian toys A slide cum tape on the toys has also been done The work in conection with children's media is in the take-off stage only. Much more needs to be done and it is hoped that with the support and co-operation of enthusiastic workers and agencies, it should be possible for us to take this work further. □

A still from "Ek Anek aur Ekta"



Evaluation of CET Projects

Dr. Jagdish Singh
Reader, CET

EVALUATION of Educational Technology is concerned with determining the success or otherwise of educational systems/programmes/materials in view of the objectives set forth and suggesting ways for bringing about continuous improvement in them.

Earlier attempts of evaluation have been mostly subjective and grafted on to a programme at a later stage—a kind of *ad hoc* reporting after the event This is very much restricted in scope and of little use to managers/producers in making decisions about improving the systems/programmes/materials. The concept was later enlarged to include more scientifically based reporting procedures based on more rigorous research techniques, sampling procedures, tools and analysis of data. They often follow experimental and psychometric traditions, and are more statistical and objective.

Media Comparisons

The most common forms of evaluation in this category are media comparisons (Would the learners learn from a video-tape more than they would from a tape-slide presentation or would the learners learn from television presentations in a multi-media package more than from each of the other inputs in the package?) or media effectiveness (To what extent change in learners' behaviour would be due to the use of a particular medium?). The aim is generally to examine whether a medium or combination of media would reach required standards of pre-determined criteria. This approach to evaluation depends on experimental and control groups, pre-tests, exposures and post tests. The gain in attainments is measured to assess the effectiveness of medium or relative effectiveness of media.

This approach is valuable, but it too does not lead us very far. The studies are generally costly and time-consuming. Too much emphasis on quantitative information entails a neglect of data which may be salient to evaluation but may be disregarded simply because it is subjective, anecdotal or impressionistic. Also, programmes| materials fail not because of any lack of educational value in them but because of interactions of various circumstances, pressures, expectations, opinions, attitudes, workstyle of learners which may lead to considerable differences in acceptance of programmes. Failure to consider these facts leads to collection of data which may not be very meaningful.

The current approach to evaluation is more flexible and judicious The emphasis now is not so much to measure the performance after the event (though it is still important, but in a different perspective). The idea is to monitor progress at all stages along the plannning, production and implementation route, with evaluators involved from the beginning so that findings can be built into the design from the outset Broadly, it includes three phases of evaluation namely, planning research (feasibility evaluation), formative evaluation adn summative evaluation

Studies

It is with the last approach to evaluation that the Centre for Educational Technology is largely concerned with. However, the other approaches have also been used at times under not so ideal circumstances. The Centre undertakes studies of systems, innovations, methods and materials developed by it or by other agencies. The following account highlights some of its salient activities in evaluation.

Teacher Training

Taking advantage of the SITE during 1975-76, the Centre developed a multi-media package to re-train a large number of primary teachers in science more effectively in a short period of time and at a less per unit cost than conventional approaches to training. The package was operated first in October 1975 and then in July, 1976 when a group of about 24,000 teachers

were trained at each go. Evaluation of the package was done each time. Lack of time prevented formative evaluation in full measure during preparation of the package. However, the feedback from the first evaluation partly played the role formative evaluation would have. On the basis of feedback and try out of inputs in the field, a number of changes were made in the materials and in organisation of the package before it was operated for the second time. On both the occasions the course was operated under limitations obtaining in the field. To determine the potentials of the package, it was offered again under controlled conditions and gains assessed.

School Radio

The Centre has conducted a series of studies one each in Jaipur, Jalgaon, Delhi and Madras on school broadcasts, and another study on the functioning of School Broadcast Units of All India Radio

The Working Group on the Radio set up by the Centre had recommended that before measures to use school radio could be worked out, total system broadcasts involving planning, production and utilization be examined. One fruitful outcome of these studies has been the initiation of the feasibility project undertaken by the Centre on the teaching of first language to children of early primary classes using radio mainly, and other support materials.

School Television

Schools in Delhi are the first to start using television in class room. The Centre has completed a study to determine the extent of utilisation and understandability of the programmes by the children.

Formative and summative evaluations of its own programmes|materials is a regular activity of the Centre. As a result, it has come out with standardised training manuals for scriptwriters of educational radio and television, writers of correspondence lessons, and the users of half inch video technology. Prototypes of audio and video programmes, diagnostic test items for primary teachers in mathematics and self-instructional materials on primary science also deserve mention in this category.

One of the early studies conducted by the Centre was on the impact of SITE on school children. This was carried out in collaboration with the Indian Space Research Organisation in all the six SITE States.

Training in Evaluation

Of the Centre's various training programmes in educational technology. orientation of the State ET Cell personnel in simple techniques of evaluation is important. One such course was organised by the Centre in late 1977 in which officers from seven state ET Cells participated.

The Centre has also provided consultancy and its expertise to state ET Cells and other outside agencies in designing research studies and tools, and statistical analysis of data, whenever called for.

Systems approach is the keynote of the Centre's activties. Evaluation forms an integral part of systems designing, and hence occupies a place of pride in the Centre's scheme of things. □

A Novel Projector

Centre for Educational Technology with the assistance of Workshop Department, N.C.E.R.T. has prepared proto-type of an improved portable rear projection screen for projection of films/slides in a classroom in daylight. It can be placed in a corner of the classroom, so that all the students are seated within an angle of 45° to the normal to the screen. Conventional screens have to be placed in the middle of the front wall of the classroom so that seats of the studnts extend upto an angle of more than 60° to the normal to the screen. Thus the students at the extreme left or right see a very narrow picture and thus do not comprehend it well. Also, the conventional screens, being placed right in front of the blackboard tend to be used in place of the blackboard. Thus, they push the blackboard into the background and do not help the normal teaching process using the blackboard.

Design of the proto-type is being further improved to maximise the convenience in handling it and at the same time to minimise its cost.

Educational Technology cells in the States

Dr. S. C. Varma
READER, CENT

WITH the establishment of Centre for Educational Technology (CET) at the national level, it was imperative that similar organisations should be formed at the State level, for qualitative improvement in education. The objectives of the State ET Cells are :

1. To stimulate education at all levels and to bring about qualitative improvement in education ;
2. To design efficient education system for universalisation of primary education, adult education and continuing education ;
3. To contribute towards reduction of wastage at the school level, particularly at the primary level, by making the primary school instruction more interesting by the supply of audio-visual instructional material and training of personnel required ;
4. To prepare State Plans for producing films and to assist in the training of script writers, presenters and classroom teachers ;
5. To coordinate with other agencies like the AIR and development authorities for production of suitable educational programmes for radio and television ; and
6. To organise short-duration courses for planners and decision-makers in Education Technology.

The functions of ET Cells are :

1. To prepare printed literature required for the broadcast lessons ;
2. To train user (i.e. classroom) teachers, who will pre-broadcast instructions and conduct post-broadcast discussions in the classrooms;
3. To coordinate the class time-tables with television and radio broadcast programmes ;
4. To arrange to produce certain programmes of a local nature some of which may be live broadcast programmes ;
5. To arrange to exhibit educational films in a planned manner related to the curriculum ;
6. To make use of all audio-visual and other modern technologies to improve education ;
7. To assist in the selection of scriptwriter teachers for training ; and
8. To do the necessary liasion work vis-a-vis the Government of India's Ministry of Education on the one hand and the State Departments of Education and the schools, on the other.

Role of ET Cells

While there are many agencies for improving education outside the classroom, the ET Cell can serve as an excellent agency for this purpose also.

Reckoned in sheer numbers, ours is one of the largest systems of education in the world. There are many first generation learners Hence, individual difference among learners is far more today than 30 years ago. Due to individual difference there is need to individualize instruction where ET can help to a large extent.

In the case of Socially Useful Productive Work *(SUPW) in many villages, meaningful skilled work relevant to local conditions is being done by skilled craftmen, which the children can learn. They are a resources for education. It is a challenge for using these resources in a meaningful way.*

The NCERT has a scheme of establishing 100 'Teacher Education Centres", one in each district Gradually all districts will be covered. These are basically the centres for continuing education for teachers. ET Cells should keep track of these centres and help in developing materials for them.

Since Educational Technology implies the use of all resources (men, materials, methods and media) in a system to optimize learning. It is obvious that the most pressing need in India is to apply it to the problem of Universalization of Primary Education along with Comprehensive Access to Primary Education (CAPE), a UNICEF assisted Project.

It is a well known fact that education can hardly be made universal if there is insistance on the institutionalized pattern and on traditional curricula. In other words, it has to be organised on a massive scale with structures and schedules relevant to the needs of the target communities, and with curricula, meaning for the daily life of the concerned people. Furthermore, in the most deprived communities, which cannot appreciate the long-term benefits of education, because of their precarious economic conditions, and work which bring ready economic return to the needy families.

Optimization of learning, besides improving quality of education in this sense would, therefore, mean the extension of the benefits of education to the most deprived sections of our society viz. the backward communities and areas, to tribal people, and to the children residing in urban slums. ET Cells have started working in this field.

It has also been recognized that the education of children in such economically and culturally deprived communities cannot be separated from the education of the adults. The educational deprivation of earlier generations has led to the formation of attitudes which do not allow the families to benefit from education even though they may be able to afford it. Therefore **while the new design of education is extended to the children, it should be accompanied by efforts directed** towards adult education in the same communities and ET Cells can contribute in this field also.

For Social Transformation

While education of children and adults will have a new content in a non-formal setting, it has to be emphasized that in the emerging perspective of national development we have to focus on a wider spectrum of educational objectives. There is education in art, and in many kinds of employable skills for which there is personal and social need—which has to be provided in the new system This is a challenging task for the ET Cells.

Thus, the wide-ranging educational responsibility of education children, women and adults have to be taken up through suitable media and means. The CET has to operate in this setting and optimize the learning for such diverse groups. Naturally, this being a crucial area of development for the whole country, connected with productivity, social change and the quality of life, it cooperates with many State and Central agencies.

The recepient groups are so diverse and the centres of their educational activity are likely to be so varied, that the materials and media employed will also have to be appropriate for each situation. It can be visualized that correspondence education would be employed on the largest possible scale, particularly to prepare the facilitators or interveners of the non-formal programmes. Correspondence would have to be accompanied by suitable contract programmes, and strengthened by radio support wherever possible. Since the radio provides a comparatively cheap medium, the know-how of which is simple and widespread, the maximum benefit must be taken from it. The correspondence lessons themselves must be designed using known techniques of programmed learning to improve their efficiency. Lesson writers and scriptwriters will also have to be trained.

Valuable experience has been gained from television during the SITE programme and steps are being taken to continue and enlarge the scope of the programme

through ground-based stations and the INSAT. Therefore, this medium must also be utilized to the full, by training scriptwriters and producers and making prototype programmes for experimentation and broadcast.

Both the programmes listed above, would involve the production of software on a massive scale which ET Cells or any other single institution cannot do. However, the CET is instrumental in building and mobilizing the potential of a large number of educational institutions and other centres including the various Departments of the National Institute of Education and the four Regional Colleges of Education in planning and coordinating this effort. In this connection large-scale training in production of software and in maintenance of hardware will be needed, which the ET Cell may undertake in cooperation with other institutions. It must produce usable programmes in the course of the training.

Films and Audio-visual Aids

Other audio visual aids which make learning more proficient may also be developed. Films in regional languages for both formal and non-formal education have to be developed through units and agencies particularly in educational institutions where resource persons are available. The CET is helping the establishment and growth of these units and provides training through prototype production. Here again, prototype would not mean casual production of exeprimental films, but all training should result in production of usable films and strips. Slides with cassetted commentary, and other cassetted programmes of self-learning, accompanied by printed materials or scientific kits, should also be encouraged.

In the field of Educational Technology very little research has been conducted in India. There are only two or three studies on media comparison. It is, therefore, suggested that specific research topics should be taken up from the areas like :

1. Sociological and psychological problems in the development and use of ET ;
2. Media effectiveness including programme specific studies and case studies ;
3. Cost benefit analysis ;
4. Comparative studies on traditional versus distant open learning systems ; and
5. Organisation, planning and management aspects of different technologies and learning systems.

Research is needed in developing suitable intermediate/appropriate/low-cost technology. Collaboration between the industry, scientific organizations and ET Cells, universities and other suitable institutions is expected to yield better results. The CET may take initiative in this matter.

The NCERT should through its journals work as a clearing house of information in this field so that the various ET Cells in the States and the ET units in the universities are fully posted with latest research and studies.

Gradual Development of ET Cells

The ET Cells have been set up in various states in a phased manner since 1972. To begin with, they were set up in the States covered or shortly to be covered by the AIR, television as also by Satellite communication. In the Fourth Plan, ET Cells were established in only two States, namely Maharashtra 1972-73 and Rajasthan 1973-74. By March 1975, five more ET Cells were set up in the States to be covered by the Satellite Instructional Television Experiment (SITE) which was to commence on August 1, 1975. The other States were Andhra Pradesh, Bihar, Madhya Pradesh and Orissa. Rajasthan had already established the ET Cell earlier. Thus, by the end of 1974-75, there were ET Cells in only seven states—Maharashtra and six others states covered by the SITE.

As a result of intensive pursuasive efforts on the part of the Ministry of Education, many more States agreed to establish ET Cells in principle or have joined the programme. At present there are ET Cells in twenty States.

In addition to the above the four Regional Colleges of Education at Ajmer, Bhopal, Bhubaneshwar and Mysore have also full fleged Departments of Educational Technology.

The ET Cells have received constant academic guidance from the CET in organizing their programmes. □

Educational Technology : An Evolving Concept

K. Ramachandran

LECTURER, NCERT

THE development and use of a modern Educational Technology is viewed in different ways by different people. Some acclaim it as the basis of a revolution in the educational system aimed at improving the effectiveness and efficiency of education at different levels. Some castigate it as a movement aimed at replacing the traditional teacher from the educational scene by sophisticated machines and gadgets. They argue that with the advent of Educational Technology gradually the role of teachers and students would be reduced to that of mechanical robbots The subject of Educational Technology has rarely been treated by either professional educators or by laymen in a scientific manner which would provide an answer to what Educational Technology (ET) is and how it could be useful for education, training and extension work.

With more and more people with varied backgrounds and associations joining the groups of advocates and critics of ET the list of terminologies and definitions related to ET has been growing steadily in recent years. Educational Technology continues to be a changing concept, partly because of the nature of technology itself and partly due to the varying interpretation of its effectiveness and importance. As a result, the term Educational Technology is open to wide and varied interpretations resulting in certain degree of confusion regarding its very concept.

Aspects of Educational Technology

Much of the confusion and dispute that surround the concept and purposes of ET originates from the vagueness of its definitions Educators, experts and the laymen alike often fail to distinguish between two major aspects of the concept of Educational Technology. One of them refers to the application of engineering principles in the development of electro mechanical devices and equipments used for instructional purposes. It is concerned with the introduction of the educational hardware like film projectors, slide projectors, over-head projectors, video-tape recorders, tape-recorders, cassettes, television, radio, teaching machines etc.

... gradually mech tion of teaching through audio-visual aids and th the development of aids such as teaching ma specifically designed for instructional purpose aids transmit, amplify, distribute, record, present reproduce stimuli to increase the effectiveness of truction. They also, sometimes, enable the te to deal with larger groups of learners.

In such situations, the learners are made to pond to a variety of stimuli presented to them thr the sophisticated equipments. The emphasis is on technology in education, which reflects the totalit the gadgets and mechanical aids or devices use education. Thus, the term Education Technology limited to the use of hardware and began to be re red to as the 'media born of the communications re lution which can be used for instructional purp alongside the teacher, textbook and blackboard."

Technology of Education

The other aspect of the concept of ET refers the detailed application of the psychology of le ing to practical instructional problems. The advoc of this view-point believe that just as an automo engineer can design a car by applying certain b engineering and physical principles and little art intuition, the Educational Technologist can build the learner a complex repertory of knowledge or haviour by applying certain psychological princi of learning together with a little art and intuition

According to them Educational Technology is ba on the assumption that the psychology of lear encompasses all forms of relatively permanent be vioural changes which result from experience, incl ing the experiences of the learners in different insti tional situations. This led to the emergence of software approach to instructions, the development which has primarily been under the area of behavio sciences and learning psychology. The emphasis this case, is on the technology of education, whic concerned with improving the effectiveness of le ing.

Neither of the above mentioned interpretations E. T. independently represent the concept Educational Technology. A useful and all-pervasive view of the concept of Educational chnology can be established only with the inclu of developments in both directions. Instead of c sidering the hardware and software approa separately in isolation from one another what is es tially needed is an overall integrated framework. U

the approaches interact in the design and use of instructional equipments, materials and procedures. When one attempts to organise instruction, it is necessary to combine the application of the psychology of earning with electro-mechanical engineering to optimise the learning process.

Programmed Learning

The principles of modern E. T. are not of very recent origin. They were vigorously pursued by some of the innovative curriculum reformers as early as the 1930s. Many diverse streams of influence have assisted in the emergence of E. T. in its present form. Media research, educational psychology, systems analysis, programmed learning, communications theory, educational measurement, skills analysis and curriculum development helped shape Educational Technology.

Of all the contributory disciplines, programmed learning has probably given most of the impetus for the development of Educational Technology. The programming of instruction is a process of designing instructional materials and systems which results in a rationally constructed and empirically validated set of procedures or products. The process of programming consists of the following five basic steps :—

(1) Formulating the objectives of instruction in terms of precise and observable performance of a learner, who has completed the instruction,

(2) Designing and evaluating criterion measures which would rate learners individually on a scale of attainment of the desired knowledge or behaviour;

(3) Testing representative target group of learners to learn their characteristics which will determine, in turn, the design of instructional materials and procedures;

(4) Selecting instructional media and preparing instructional materials; and

(5) Refining the instructional material through individual, group and field try-outs until effectiveness of the material reaches satisfactory levels in real situations. The materials are finally validated by specifying a complete description of their performance interms of their effect on specified groups of learners under carefully described conditions.

The developments in programmed learning contributed to the improvement of instruction in a number of ways. They focussed attention on several crucial aspects of the learning process such as the need for learner activity, a learner-centred approach to instruction and the importance of determining objectives of instruction and feedback. They also helped to promote the acceptance of systems thinking in education which led to reorganisation of approaches that can integrate the learners, teachers, hardware and appropriate software into an effective, efficient and economic system.

Towards a Definition

In their efforts to avoid restricting educational technology to the use of hardware or audio-visual aids, many of its advocates today employ an inclusive definition of E. T. One of such definitions refers to E. T. as "the organised design and implementation of learning systems taking advantage of but not expecting miracles from modern communications methods, visual aids, classroom organisation and teaching methods". This view later led to the conclusion that E.T. "involves the development, application of systems, techniques and aids to improve the process of human learning".

According to this educational technology is characterised by four main features—the description of objectives to be achieved by the learner, the application of principles of learning to the analysis and structuring of the subject matter to be learned, the selection and use of the appropriate media for presenting materials, and the use of appropriate methods of assessing the performance of the learners to evaluate the effectiveness of courses and materials.

While the proponents of these definitions also stress the importance of the use of the media, they do not consider it as the end but rather as a means to facilitate learning. A few include in the realm of Educational Technology "all the intellectual and operational efforts made during recent years to regroup, rearrange and systematise the application of scientific methods to the organisation of new sets of equipment and material"

Kinds of Educational Technology

These broad definitions, however, do not meet with approval among some of the supporters of Educational Technology. The search for greater specificity impels some to divide E. T. into several components. One

such effort distinguishes four different conceptions of Educational Technology—the use of machines in education, a technology of instruction, curriculum development and the management of education. Some consider that there are only two kinds of Educational Technology—relative, which emphasises procedures and/or devices, and constructive, which is concerned with analysis of instructional problems and the construction or selection of instruments for evaluation and of techniques or devices to produce the desired outcomes.

Another way of distinguishing among different components of educational technology has been interpreting it as "the use of technology in education" which is concerned with increasing the use of equipments, and as a concept, "the technology of education" which is concerned with improving the effectiveness of human learning.

Many of the present-day Educational Technologists view E. T. as the application of scientific knowledge about learning and the conditions of learning, to improve the effectiveness and efficiency of teaching and training. The difference between Educational Technology and audio-visual aids to instruction lies in the search for the effective contribution to learning of each of the media and methods of instruction, by themselves or in concert Educational Technology, therefore, is viewed as a "systematic way of designing, carrying out and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and non human resources to bring about more effective instruction".

Thus, Educational Technology concerns the efforts to provide appropriately designed learnnig situations which bring to bear the best means of instruction. The means of instruction may involve modification of the learners' environment through techniques of presentation, arrangements of learning activties and organisation of the social and physical surroundings. Its major purpose is to facilitate and improve the quality of human learning.

The approach that is characteristic of modern Educational Technology is the outcome of three major areas of interest in the field of education and training during the past five decades. These areas of interest have been the effective utilisation of broad range of resources, both human and non-human, for learning, the emphasis on individualised and personalised learning and the use of systems approach in education.

Systems Approach

The Systems Approach is a technique of understa ing and controlling interaction and interdependence the major parts of a system in a given situation achieve specified objectives. The adoption of Syst Approach includes the following steps.

— Identification of a problem ;

— Specification of objectives;

— Analysis of tasks involved in achiev the objectives;

— Assessment of total input and co traints of the system;

— Generation of alternative strategies;

— Evaluation and identification of prefe ed solution in a given context;

— Designing the preferred solution in given context; and

— Modification of components and syste operation based on feedback data ai continued evaluation.

Like all other man-made or natural systems, tl educational system has a set of *inputs,* which are su ject to a *process* designed to produce certain *output* which are intended to meet the requirements of tl systems objectives. A major advantage of the Systen Approach is that it encourages the setting up of design objective and it provide a way to know whe that objective has been met. The Systems Approac could be applied at micro (institutional), mezzo (re gional or state) and macro (national) levels.

Educational Technology, today, is widely accepte as the application of systems approach in the systema tic design of a learning system, and as a method o approach combined with the appropriate and neces sary media and materials to bring about improvemen in the teaching-learning-evaluation process. It may however, be noted that Educational Technology i neither an end in itself nor a concept that embraces al of education. Rather it can be considered as a mean to accomplish some predetermined, clearly define and unambiguous educational and instructional ob jectives. □

Reels of Knowledge

The ERIC Project of Audio Tape Library

B. A. Krishnamurti
Consultant, CET

THE Audio-tape Library is a shining mile-stone in the progress of Educational Technology in India. It is a welcome innovation whose objective is highlighted in the following lines from the historic letter written on March 1, 1975 by the then Director of National Council of Educational Research and Training (NCERT) to the Director-General of All India Radio.

"to develop a library of tapes at the Centre for Educational Technology, NCERT, which may help us to take renowned specialists and experts, personalities from the cultural, artistic, social and political world to the schools and colleges. A programme of supplementary audio-visual material including tapes would enrich the learning process of children at school and would enable us to project realistically such topics as "Our Freedom Struggle" "Our Cultural Heritage" "India in the Modern World" and so on. It would also enable us to prepare interesting documentaries on some of our national leaders and on some aspects of our social, economic and political life."

The project, approved and funded by the Educational Research and Innovations Committee (ERIC) of NCERT, was to be undertaken in two phases. In the first phase, material was to be collected from existing sources such as the archives of All India Radio Delhi, and other agencies, both national and international. The second phase was to be devoted to production of new material.

The audio-tapes were to be the treasure-house of the past and fountain-head of knowledge of the present.

One can listen to the voices of the great leaders of India and the World, who are no more with us—from Rabindranath Tagore to Jawaharlal Nehru, from Aldous Huxley to Pearl Buck. One can travel back as if in a Time Machine and hear commentaries on the great events of our national history. Or one can get acquainted with the builders of Modern India. Or one can listen to a travelogue or about some developmental activity.

In a country like India, so rich in its oral traditions, this project of Audio-tapes adds a new dimension to the spoken word through technological means.

The project for developing an audio-tape library was launched by the Centre for Educational Technology on March 1. 1976 in collaboration with Directorate-General of All India Radio.

Aims and Objectives

This project was started with the following aims and objectives :—

(1) To prepare programmes of educational value based on the material from the archives of All India Radio;

(2) To make these programmes available for educational institutions for playback to students of Higher Secondary classes;

(3) To prepare brochures of the texts for each of these programmes for serving as guides to the teachers during playback, and

(4) To build up a library of recordings of programmes which are informative and of interest to students and offer these programmes to educational institutions and educationists who need them for educational purposes.

Preparation and production of the programmes

The team working on this project consists of the leader, three resource persons and two production assistants. The stages in the preparation and production of the programmes in the project are as follows .—

1. The resource persons listen to all the material drawn from various sources and sort out those which are of educational value. The selected material is gone through once again and suitable excerpts are taken out from these recordings. Programmes are then planned on the basis of these excerpts.

2. The commentary required for linking these excerpts is written out and recorded separately. The next step is to record this commentary along with the excerpts and other sound effects wherever necessary to produce the final programme.

3. The final programmes are recorded firstly on spool tapes and then on cassettes also. Thus, two recordings of each programme, one on spool tape and the other on cassette are kept in the library.

4. Brochures for the programmes are printed on the basis of these scripts. Seven brochures have been brought out so far. Brochures for the remaining programmes are under preparation.

Though originally the source material for the programmes was confined to the archives of A.I.R , the project team has been tapping the following sources also .—

1. Material available in the archives of other stations of All India Radio;

2. Sound tracks from video-tapes of selected programmes telecast from the Centres of Doordarshan;

3. Sound tracks from films of educational value produced by the Films Division of the Government of India and

4. Agencies like Sangeet Natak Akademi, National Science Academy, ICA Centre, etc.

Types of Programmes

The programmes produced in the project are of three types. Under the first type, excerpts from the source recordings are presented with suitable introduction, linking commentary and sound or musical effects.

There are some programmes in the archives, particularly talks of educational value by eminent scholars and scientists, national and international. Interesting talks of informative nature by persons who have established themselves as well-known writers and broadcasters are also preserved in the archives. These items are edited and made into programmes with suitable introductions, without tampering the tempo or cogency by linking commentaries.

The third type covers the original programmes produced under the project. The subjects for these programmes are selected by the resource persons and finalised by the leader of the project. Scripts are then prepared for these programmes. Any effects and/ or interviews required for inclusion in these programmes are recorded on the spots. Different v are introduced wherever necessary to add richne these programmes.

Programmes like Rail Museum, River Kaveri, S Energy, Meghalaya, Rural India, Nations' Ca Card (philately), Blossoms of Life (Internati Year of the Child) Kerala and Tamil Nadu Pavil in the Agri-Expo Exhibition 1977, National Si Industries Fair 1978, Nature's Bounty and a others belong to this third type.

During the first phase of two years of this proj the programmes produced were mainly in Engl In the second phase programmes in Hindi as wel in some regional languages like Tamil, Malaya and Telugu have been included in the produc schedule of the project on the recommendations of Committee appointed by the Director, NCERT. Committee was greatly impressed with the work d in the project and was anxious that program should be produced in other regional languages al

A few of the programmes have been made different languages for use by some of the station All India Radio and one or two ET Cells in the so The programmes on River Kaveri from its source sea has been produced in English, Hindi, Malaya and Telugu ; the programme on Outer Harbou Visakhapatnam, the largest in Asia in English, Hi Malayalam and Telugu ; and the programme on S Energy in English, Hindi, Malayalam and Ta Language versions of other selected programmes also being taken up in due course.

Many of the programmes produced in this pro are based on AIR's material which involves co right. The Director-General of AIR has clarified no infrignment of copyright is involved if the playb of the programmes is confined to educational ins tions apart from training institutes and educati departments of Central and State Governments.

The Audio-type Library, which now contains m than 170 programmes is available to all educati institutions. The CET is very keen that these grammes should be used by one and all for educati purposes. Hence, it has come forward to supply co of the recordings of these programmes to individ and institutions engaged in spreading education. T copies are made available free of cost to those provide blank tapespools on cassette for this purpo

More than 250 copies of our programmes h been supplied to schools, Educational Institut Training Institutes, and ET Cells in the country. latest request is from the State Institutes of Educa Gangtok, Sikkim, for 24 programmes.

Educational experts from abroad who used to visit the Centre had shown great interest in the project and few of them had carried back some of the material produced by CET. A few programmes have been given to the South Carolina University for use at their request while the High Commissioner for Trinidad and Tobago has taken dubbings of more than 20 items for use in the educational institutions in his country These are only a few instances to show that the project is attracting the attention of educationists

A programme on the National Anthem has been produced under the project. It includes the recital of the poem by Gurudev Tagore himself. A brochure has been brought out on this programme which contains the staff and Indian notations for the singing of the Anthem.

The Director of Education, Government of Sri Lanka, and the Director, Centre for Learning Resources, Inner London Authority were two of our foreign visitors who appreciated this innovation of developing audio-type library and collected all relevant material to explore the possibility of setting up similar libraries in their countries.

The academic staff of the Centre have missed no opportunity to take these programmes for demonstration whenever they participate in seminars locally and outside Delhi.

In the letter of the Director, NCERT, extracts from which have been quoted at the beginning reference had been made to "projecting realistically such topics as our Freedom struggle". Accordingly a programme entitled "India Becomes Free", has been prepared by the project. It describes the proceedings in the Constituent Assembly at mid-night of August 14/15, 1947, when India became independent. The programme features excerpts from the speeches of Jawaharlal Nehru, Dr. Radhakrishnan and Dr. Rajendra Prasad delivered on that occasion. This programme is one of the favourites of all the visitors to the Centre, who have taken keen interest in the audio-programmes.

Finally, one more instance to show the enthusiastic response to these programmes. "Naad Ninaad" is an item in Hindi of great intereset to students of music. It was telecast from Doordarshan. As its duration was 45 minutes, we prepared a programme of shorter duration of 15 minutes based on excerpts from the sound track of the item and played back the programme to Higher Secondary Music students of a local girls school. After the playback was over, one girl with a dissatisfied look asked "Is that all?" She was told that what she heard was a condensation. Immediately all of them with one voice demanded a much longer version. "It would be of great help to us for our study". It was made later and played back to them.

The project, planned to run in two phases of two years each is being funded by the Educational Research and Innovations Committee (ERIC) of NCERT. The second phase comes to an end on February 29, 1980.

The audio-tapes were to be the treasure house of the past and fountain head of knowledge of the present. One can listen to the voices of the great leaders of India and the World, who are no more with us. One can travel back as if in a Time Machine and hear commentaries on great events of our national history.

With the inexhaustible material from AIR and other agencies and with the perennial source of ideas from experienced broadcasters, the audio-tape library will come to stay as an effective aid to Educational Technology. □

Radio For Language Teaching

contd from page 12

There will be comprehensive evaluation of the achievement of children at the end of classes I to III. This proposed detailed study will be confined to small samples from the two districts participating in the project. Gains in language development, listening, reading and writing will be assessed.

This is the first experiment of using radio systematically and with high frequency in formal education and that too for the very young children. Several new ideas are being tried out simultaneously : I. Educationists should have the major responsibility in educational broadcasts 2. Radio can play a serious and meaningful role in formal education 3. Young children of age group5-7 can listen to and benefit from radio programmes.

The results would be watched eagerly. □

Development Technology

Science, Technology and Development Edited by K. D. Sharma and M.A Qureshi, Sterling Publishers Pvt. Ltd., Pages 478

THE publications under review is a collection of essays contributed by both Indian and foreign authors in honour of Prof. Abdur Rehman. It goes to the lasting credit of Prof. Rehman that he initiated studies, such as TRIMURTI, TRIVENI and ANATOMY OF SCIENCE, etc. on the various science—society inter-actions and brought into focus the compelling need for study of science and technology as applied to the process of socio-economic transformation of the deplorable conditions of the poor masses in the Third World. That science and technology make a decisive contribution to economic growth is admitted but with some qualifications. The claim made in the Sixties that there is a direct casual relationship between scientific and technological inputs on one hand and economic growth on the other is unwarranted. Countries like U.K. inspite of a higher scientific and technological investment as related to G N.P. recorded a lower rate of economic growth compared with Italy's faster growth rate despite smaller R&D inputs. The process by which science affects economics is for more complex and obscure than was thought in the 1960's. The relationship between the two is further vitiated due to political ambitions of the Big Powers which made huge budgetary appropriations for science and technology under the military phase after the World War II.

The editor's claim in the INTRODUCTION that the basic theme that emerges from the study of these essays is that all the scientific and technological questions facing scientists should have their roots in culture and social reality of the society. As a general proposition it is alright. However, this normative claim which smacks of a Marxian universalism is a tall claim which is not vindicated by the corpus. It may be due to lack of an integrated and well-thought out structural unity and design of the essays. This is natural for a publication like this meant primarily to honour a distinguished person of the scientific community. The eassys—twenty six in all are grouped under eight sections—Science Policy and Development, Science and Society, Technology Assessment, Technology and Under developed Countries, Research Management, Science in India, Science in other Countries, and, Study of Science. However, it is not the number of the essays but the diversity of their themes as well as unevenness in their quality which becomes a limiting factor in the review of a publication like this. Some of the essays viz. Science Policy and Social Development, Science and Policy Making, Integrated Vz. Sectoral Policies for Science and Technology, and A Frame work for Alternative Technology form part of the core of the publication.

Perhaps most relevant to our present situation and current thinking in this country is the essay on A Strategy for Rural Development by Shri Subramaniam formerly Minister of Planning who pioneered the strategy of green revolution in India Aluding to the governmental policy of encouraging farmers individually for the exploitation of ground-water, a decision taken after the end of the Third Five Year Plan as a part of strategy for increased agricultural production, he demonstrates why those assumptions on which the afore mentioned policy was based in practice turned out to be invalid since it defeated the goal of social justice. He says, 'The drive for increased production adds new muscle to those already entrenched in power Their ability to manipulate, to siphon scarce inputs in their direction, gets applauded as their ability to 'innovate'. Their interests are, as a rule, zealously safeguarded at various levels of decision-making in government". In the context of Integrated Rural Developmet strategy for tackling the problem of rural poverty he describes his experiences and lessons derived thereof connected with the project in Karimnagar a backward district of Andhra Pradesh. The project posed a challenge to scientists of the CSIR to relate their R&D programmes directly to the needs of the common man. In another essay on the "Regional Development Aspect of Technology Policy" the emphasis is rightly placed on the need for evolving a strategy of Regional Technology Policy. This essay should be read together with other two essays on Transfer of Technology to the Rural and Collective Sectors in China and Chinese Views on Scientific Development. The essay on scuttling the Coal Gasification project at Hyderabad : The Perils of Public Patronage in Bridging the Development Gap is controversial, but instructive. It pleads for more political protection to the scientists and technologists from accountability and vilification. All in all, the publication is a useful addition. Its usefulness would enhance if a critical review of the current thinking on the draft Technology Policy statement prepared by the National Committee on Science and Technology is added.

—Dr. G. K. Sharma

;hazipur Growth "A Review"

Growth Progress in Ghazipur

Kripa Shankar, D. Phil-published by Arthik ... th Kendra, Allahabad. Pages 98, Price Rs ...

INDEPENDENCE is not only an end in it self but also an essential infra-structure for growth, development and prosperity On micro ..., Ghazipur district, typical of the economically ...kward Eastern districts of U. P., predominantly ...pendent on irrigation starved agriculture, still conti...s to have 85 per cent of the population below the ...erty level. 3 per cent of the top land-holding house...lds operate 25 per cent of the area at one end of ...e scale and 72 per cent of the bottom-most house...lds on the other The huge wealth of information ...gically presented and carefully analysed by the au...or, brings out boldly how in Gandhi's India where ...opertied classes were assumed to become the vehicle ...transformation and act as trustees by restricting their ...nsumption and using the resources at their command ...r productive uses and which has been ruled since ...dependence by Gandhiji's followers who had ample ...me and opportunity to implement his doctrines, still ...resents a dismal scene A Government enjoined to ...cure an egalitarian society on socialist pattern has ...one precious little to fulfil its obligation to the huge ...ass of people Can this continue for long ?

In 16 Chapters and 9 Tables dealing with the setting, ...rategy for growth, agricultural production, cropping ...attern, irrigation and power, soil conservation land reclamation and afforestation, development of pisciculture animal husbandry, industrial development, transport and communications, education and health, unemployment and under-employment, problems of weaker sections, financing the development programmes etc. the author has brought out the stark reality that the basic task of transforming the rural society cannot be accomplished if the present property structure is maintained intact Best solution will be to let the land be owned by the whole community and the fruits of labour be shared on the basis of one's contribution to the production pool after meeting the investment requirements So long as the present power equation continues, no advancement is possible,—rather, as the crisis deepens an enlightened leadership may emerge which with the backing of the have-nots and the poor, may take to the path of fundamental restructuring of the rural society Resources should not be diverted to the production of non-essential luxury commodities but utmost austerity be observed in every walk of life, that all wasteful expenditure by individual, corporations and the State be avoided, that public expenditure on non-productive items like administration should not be allowed to escalate, that resources be mobilised from affluent sections for speedy reconstruction of the country. The political leadership of the country, if it has any commitment to rural development will have to move in this direction for there is no other alternative path of advancement

The book will interest all those who are interested in economic development of the country and a guide to the planners of the nation

B. S. Jain

Success Of The New Extension Technology



A Cane grower receiving expert advice from the extension worker

THROUGH transfer of know-how evolved by the scientists after problem-oriented research, a new extension technique called the T and V (Training and Visit System) has been designed for the farmers.

The time-bound system yielded a commendable rise in the food production in all the states wherever it has been introduced.

"any land can be made to yield a good crop"

is the spirit behind the system.

The transfer of know-how is sought to be achieved in two stages of training, to the extension workers and their further transfering of this know-how to groups of farmers in each village through visit programmes.

A sub-division consisting about 80 to 100 village level workers (3 or 5 blocks) is the unit for training. It is attached to a Regional Research Station operated by the Agricultural University. The sub-division is headed by an agricultural officer. He and his team of subject-matter specialists remain in constant touch with the Research Scientists every week. They also visit farmers to see the impact of the training.

Representatives of input agencies like Agro-industries Corporations, Seed Corporation and Marketing Co-operatives are invited to the training sessions. This helps solving problems related to the supply of inputs and ensures timely input services and supplies.

One VLW serves about 500 to 800 farming families grouped in 100 families each. He visits the farmers in his circle atleast once a week. About 10 per cent of the farming families in each group or about 10 farmers per day should be identified as contact farmers by the VLW. They should be as many of small and marginal farmers as possible.

The system relies primarily on person to person contact for tranfer of technology, and the information media are also being pressed into the service.

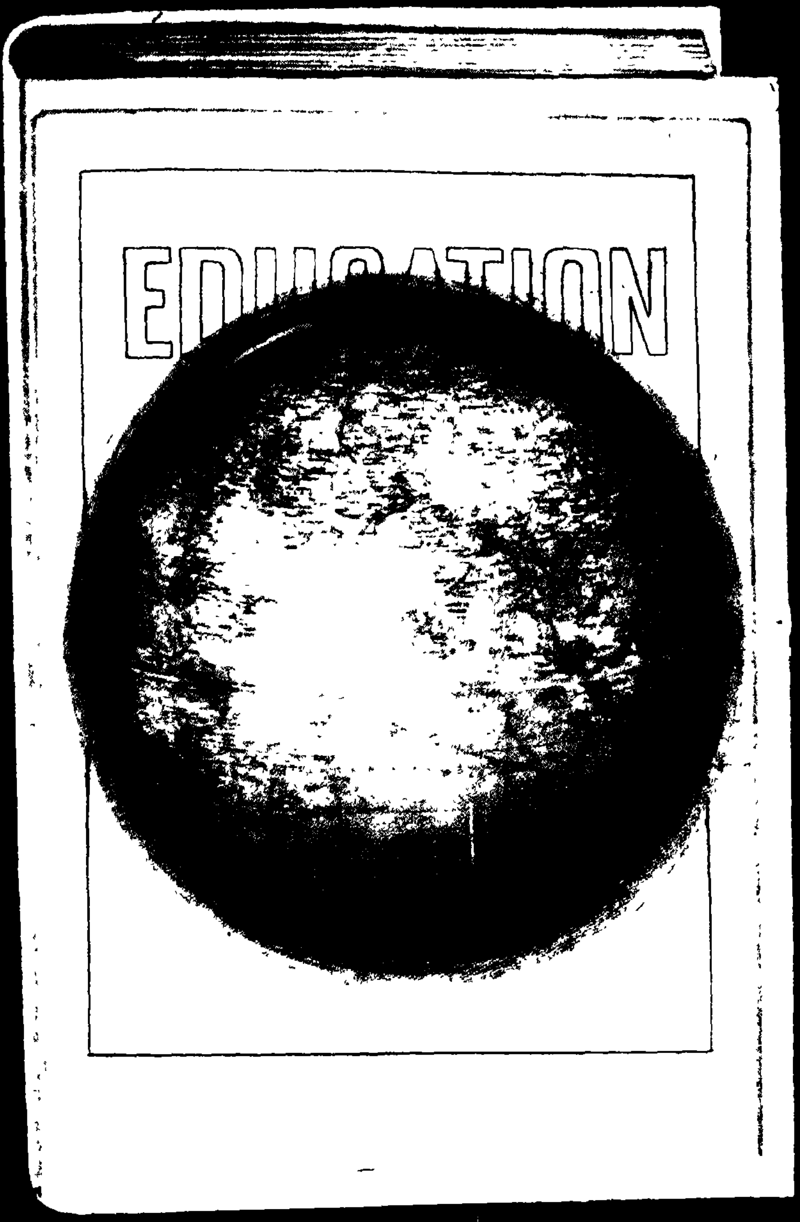
The results achieved in the areas and this T & V system are promising. All the areas under command have registered spectacular increases in the yield.

Printed by the Manager, Govt of India Press, Ring Road, New Delhi-110064 and
Published by the Director, Publications Division, Patiala House, New Delhi-110001

16 SEPTEMBER

yojana

80 Paise



EDUCATION AND NEW INTERNATIONAL ECONOMIC ORDER

LETTERS

Give us Roads

Sir,

With interest I read the articles on Rural Development by Shri V. G Rajadhayaksha and Shri P. R. Dubhashi in Yojana issue 1 June, 1979

I am a bank manager. Together with our colleages in the bank we are committed to rural development projects. But the lack of basic infrastructure facilities is a hinderance in our enthusiasm as well as time and money All this is frustrative to many of us

We, the bank managers want only one thing from our planners and leaders · Please give us all-weather accessible roads to villages Rest we will manage

P B. Sinha
Indore

A Boon

Sir,

I find Yojana a very useful informative ... d esting journal. I am a student of B A ... (Hons) and a regular reader of Yojana ... a boon for me and many other students of ... The thought provoking write up "Plan Finance ... Federal Economy" by Dr D T. Lakadaw... 16th May, 1979 issue was really a very fine ... Moreover I find Yojana the most reliable journal ... the data and statistics points of view And that ... reason why all the students like me prefer ... other periodical for the Indian Economics paper

Asmi

Bhagalpur (I

Real Weakness

Sir,

The article "Khadi and Village Industries Programme" by Somdutt, Chairman, Khadi Village Industries Commission published in Yojana, Vol XXIII/6 dated 1 April, 1979 is just a description of khadi and village industries in India. It deals with the administrative structure of the industry and the ways by which K V I C functions It also, depicts about the new planning strategy which has been deviced for K V I. sector with the twin objective of arresting the displacment of labour from the existing crafts and creation of new work opportunities in the rural areas This article also mentions about the K V.I C programme which has been drawn up for Uttar Pradesh to provide work opportunities to tappers who may become jobless in the wake of prohibition

India lies in the villages It is an agrarian econo... Once the villages become-prosperous, we can pro... say that India is prosperous Hence, Khadi and vil... industry should be encouraged The current tren... our country is to use western style of dress Gene... people are not attracted towards the use of Khadi ... real weakness lies in the fact that propaganda for ... use of Khadi is very less This weakness of Khadi ... village industries is not stated in this article ... the author does not find a solution of how to encou... the industry in the modern India

K. FRA...
Centre for Political Stu...
School of Social Scie...
Jawaharlal Nehru Unive...
New D...

YOJANA

Volume XXIII Number 17

16 September 1979

25 Bhadra 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor : P. C. Roy

Editor : N. N. Chatterjee

Assistant Editors: P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :
AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S. K. Ray
HYDERABAD : B. N. Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai
Gauhati : R N Bez Baruah
Photographic Officer : K. S. Nagaraj
Artist—P K. Sen Gupta

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. Telegraphic Address: Yojana, New Delhi. Telephones : 383655, 387910, 385481 (extensions 402 and 373) Circulation : Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription: Annual —Rs. 18. Two Years—Rs 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Year—£6.30 or $ 12.50 Single Copy—£0 12 or $ 0 25

Editorial

Any Shame Left ?

IN this International Year of the Child the poor children of our country whose number runs into millions will be perfectly justified if they direct their little accusing figures to their elders. Driven by poverty they have to contribute to the family income for bare subsistence It has been computed that their contribution amounts to 23 per cent of the family income which their parents cannot afford to dispense with in the prevailing circumstances. As a result the country has come to enjojy the dubious distinction of having the largest child labour force in the world. According to the Anti-Slavery Society's report to the sub-commission of the U.N. Human Rights Commission, 16.5 million children between the ages of 5 and 14 are working in urban and rural areas of India. It points out that oversight and ambiguities in legal codes enable the employers to circumvent the laws meant to protect the children from deprivation and exploitation.

Born in abject poverty the children cannot afford to choose either the place of work or the terms even when they have to work in dangerously exploitative and hazardous conditions. Their increasing number in the work force is a sure index of the increasing poverty among the masses They are scattered all over the farms, industries and factories. They make bidis, polish shoes, hawk newspapers, sell vegetables and serve as domestic workers.

Because of the legal provisions forbidding child labour, the number of children in organised industries has diminished considerably but a good many of them are known to be employed as unlisted labour not subject to inspection of any sort. The situation is heart-rending in unorganised sectors where working conditions are atrocious and no welfare programme exists for them. "Intolerably loathsome and undesirably inhuman" are befitting epithets for the massive exploitation of child labour in unregulated factories like bidi making, tanning, carpet manufacture, wool cleaning, manufacture of bangles and a host of other unspecified industries. It is indeed a pity that the legal provisions relating to child labour is flouted at will and everyone will agree that the law of the child does not take much time to become lawless.

Another sad and glaring aspect of the problem is that the trade unions take no interest in promoting the cause of the exploited child labour They seem to belong to the same adult world where a child counts for nothing As the child workers have not the capacity to organise themselves on the lines of adult workers, it is all the more necessary that trade union workers should evolve a strategy or plan for action which will protect child labour against exploitation and promote their welfare

The fundamental cause for increasing growth of child labour is of course the mounting poverty of the people. Any attempt to deprive the family from the income of child labour through legislation will be unreal and most certainly cause greater misery. That does not, however, absolve us of the enormity of the crime, the sense of guilt and shame Without waiting for the day of triumph over poverty, we can certainly do much to protect the largest child labour force if we mobilise public opinion for a functional code, responsive to the challenge of the child to do justice to the young.

Education and New Internation

TREMENDOUS progress in technology, particularly in communication technology, and the massive terror of nuclear weapons behind which lies more than 80 per cent of the scientific endeavour developed since the war, are transforming critically the world of values into values of the world which is dominated by the developed countries. Interaction in education is a part of this process. Two new questions are being hotly debated : (1) how does an international economic system influence the domestic educational pattern ? (2) how can education contribute to the creation of a just world order ? These questions have been asked in the context of the demand for creating a New International Economic Order (NIEO) and the current debate going on about it at the United Nations.

It is difficult to define, for a variety of reasons, an empirically consistent relationship between a new International Economic Order (NIEO) and education, the most important reason being that both NIEO and education can be subjected to competing models. Since we do not have a clear picture of the NIEO, and since it seems there is still a disagreement among nations on the basic structure and strategies of the NIEO, it may appear futile to indulge in specific exercises pertaining to them. Even if it is possible to determine the components of one, it may be difficult to determine corresponding components of the other.

The danger of forging a link between the two, NIEO and education, where such links do not exist and cannot exist is that it may indeed create dangerous illusions and unfulfilled expectations. However, precisely for this reason and for the reason that educational planning to be effective would be viwed independently, we must seriously go into problems and issues that have bearing on evolving an integrated strategy of a new world order. It is universally recognised that education is not a neutral agent. It is a simple truism that the socio-ec nomic structure of a society does determine the patt of education. It is expected of the educational syst also to respond to or confront the compulsions and t demands of such a system. If the two remain out of tu with one another, there is bound to be a crisis situatic

There are as many educational policies as there a countries, interests and philosophies and so a sear is going on for a single common approach to the NIE Thus there is a basic symmetry between the two ar any meaningful relationship between the two will ha to be made by choosing a few selected variables Man people are attempting such exercises, but we are y nowhere in identifying them.

However, the correspondence between a socio-ec nomic system and an educational system does not gu rantee that they will be so dynamically related as produce the necessary results required. The education pattern may follow exploitative and regressive soci economic system to aggravate the situation and m oppose it to change that system. The inter-relationsh between the two is of unison and conflict. The histo of relationship between the two suggests that both kin of situations had been obtained in the past. Therefo though there is no general model either for educati or new economic order, we may still legitimately lo for basic variables in the two which can supplement o another.

However, the relationship between education a NIEO is largely indirect. Some educational advan ments take place independently but most others occ through parallel developments and compulsions in t economy, the distribution system, the investm pattern, including investment in education. Th changes in the economy and investment patterns ma certain demands on the international economic ord

Economic Order

Dr. J. D. Sethi,
Member, Planning Commission

But the matter does not stop here. There is a reverse relationship also. A given international order imposes on national economies, particularly of the weaker nations, certain patterns which also get reflected in their educational systems. Therefore, the first and most significant aspect of building up a productive and purposive relationship between education and economic system is to reduce the constraints that the existing order imposes on the developing countries. Before we speak of any such relationship, the prevailing subjugation of the educational system of the developing countries to the existing international economic order must end.

A class of international civil servants and opinion makers have got itself siezed with the problem, even though for the justification of its own existence However, one cannot minimise the cultural impact the developed countries are having on the developing nations through influencing latter's educational system.

After all we are not starting from a clean slate. There exists today some kind of an international order which, by any standard, is highly inequitious and exploitative, despite all the attempts made to correct these trends. The gap between the per capita income of the poor and the rich nations is so vast, the monopoly of economic resources and technology so glaring and the differences between the educational attainments and even ordinary enrolments are so staggering, that no one can really speak of defending the present international order or the educational configuration. Indeed we are living in a double Orwellian world order in which not only some people but some nations are more equal than others. In such a situation to conceive of a single parameter like education to reduce the inequalities of the present international order amounts to self-deception.

The old colonial system was also a kind of a world order in which the relationship between that economy and education was rather simple : a small affluent minority monopolised educational power in the imperialist nations and a still smaller minority, which always acted as a prop of colonialism, appropriated educational facilities in the colonies. The educational system itself was so ordered as to subserve the interests of colonialism. That is why national leaders like Gandhi saw much greater danger in cultural imperialism than in political imperialism. In the post-colonial period, most developing countries went in for a massive linear expansion of that system in the hope of catching up with their old master but while pursuing that path they also created a basic structure for another order which could not but produce some kind of internal colonialism.

It must be recognised that some old gaps were filled through this expansion but they were done as a part of a strategy of economic development which ultimately made many developing countries more dependent on the developed countries. For example, a large expansion took place in technical education to meet the needs of industrialisation but the pattern of industrialisation adopted by the developing countries was such that ultimately they could not make use of the entire educational potential that was created. Besides, the newly created technological personnel became so heavily dependent upon the growth of knowledge in the developed world that internal and external cultural colonialism converged on one another. Most debates in the UN and other international forums take place in this context Without a revolutionary modification of the present order, there is little hope for the poor and the exploited world from any new international order.

Education, in fact, stands in a double dialectics of inter-dependence with the present global order. This order either subjugates the educational system of the developing countries to the needs of the developed world or is designed to meet the needs of the ruling minorities of the developing countries with whom the former are entering into some kind of an arrangement for running the new order. In other words the educational needs of the developing countries are coming into conflict both with the priorities of their own ruling elites and with the international order. At the same time the pressure for educational expansion in the developing countries is so large that the ruling elites are unable to resist it, no matter in which direction it takes them.

The expenditure on education as a percentage of national income is not very different in both developed

tions and growth rates differ. Yet the percentage of people who are literate, not to speak of those who get adequate education in the developing countries, remains very small, whereas the developed countries have to their credit high educational attainments, both quantitative and qualitative. The developing countries spend a large proportion of their resources on education in relation to expenditure on other fields in the hope that by acquiring educational skills, people will increase their individual capabilities and partly fulfil their general aspirations. The basic philosophy behind these policies is that through educational expansion, some of the inequalities of their socio-economic systems can be reduced. The experience, however, has been on the contrary. Most of the educational facilities have been appropriated by a small minority, leaving vast masses completely out of ambit of benefit. Thus the so called educational boom instead of equalising the opportunities has further entrenched small privileged minorities.

India takes pride in calling itself the third largest possessor of scientific and technological manpower. But a large part of this manpower remains unemployed and many of our best scientists and engineers migrate to the developed countries. In other words, a reverse transfer of resources takes place between the developed and the developing countries. According to one estimate, if all the reverse transfers are taken into account, there is no net transfer of resources from the developed to the developing countries which is a curious paradox.

Whereas the educated unemployed of the developing countries keep multiplying or migrating, developments within the rich countries have brought to light a very curious situation, namely, the educational system of the developed countries is also becoming out of tune with their own development patterns. Nearly half the products of the colleges and universities in the developed countries acquire education which they cannot and do not make use of in their employment and this gap, to some extent, gets filled up by the migrants from the developing countries. The educational crisis is truly global today, but its impact on the developing countries is far more threatening. From this perspective, failure of the NIEO remains the obvious vision.

The modern scientific and technological revolution is certainly universalising education. This revolution is not confined to quantitative growth only. Man's behaviour and aspirations are profoundly affected by bringing about qualitative transformation. It is estimated that knowledge in the form of technical progress and fundamental research is doubling itself every five years. According to the International Commission on

... to the eighteenth century industrial revolution the first machine age, which replaced and multi the physical and muscular aspects of the human fa ties, the scientific-technological revolution has si taneously conquered the mental world, with its im diate transmission of information over any dist and its invention of increasingly perfected, rationali calculating machines. This is a phenomenon wh necessarily affects entire humanity.

Thus the scientific and technological revolution, matter where it takes place, puts heavy demands pressures on the education systems of all countr On the one hand, it has opened up large possibili of thought and action which are truly universal. the other, the same revolution has produced th opposite trends or possibilities : (1) the adopt capacity of the social systems has failed to come to the required levels ; (2) the very existence of humanity is threatened by the use of the acquired kno ledge for total human destruction , and (3) the tech logical and economic gulf between the developed the developing countries is widening

Viewed in this context, what is being discussed the international forums about the new internatio economic order can hardly be described as a seri attempt to make such an order. The debate is confir to rehtorics or to making minor changes in the exi ing arrangements about international tariff, debt reli transfer of resources, transfer of technologies or sh ing natural resources etc There is very little of con quence emerging from all the debates about the ne international economic order. Nothing signific emerged out of the debates about the strategies development of the first and second decade Now are told to ponder over the strategies for the eighti All that has regretfully been agreed upon so far is th the rich countries having been caught in the crisis their own making are unlikely to make any significa contribution

More positively, however, it has come to be gen rally recognised that the new strategy must take in account not only the problems and processes of ec nomic growth but consider the problems of social pr gress of which education is one component. As ec nomic crisis keeps bursting on the nations of t world sporadically, there is a feeling of deepeni crisis in the educational systems of practically countries

If the educational system of the developed wo is not able to cope with the translation of the scie tic-technical evolution into productive uses. it

ırtly due to the fact that a large part of this new ıowledge is applied in the military field. It takes a :ry long time before the civilian uses of the military search and development can be translated into eco- ɔmic terms. That is why a large number of people :lieve, and quite rightly so, that there can be no :w economic order without a new political order in hich there are no nuclear weapons and no nuclear rror.

About 80 per cent of the world expenditure on so- ılled defence is made in the developed countries, ɔth capitalist and communist, the figure running to ɔout 400 billion dollars. The military industrial ɔmplex of the Western capitalist and East European ommunist countries not only absorbs a large chunk ' the educational output of their institutions but also ıposes a particular, i.e. military-oriented, pattern ı the educational system of the developing and the :veloped countries, creating a very serious situation ır people. They are being bullied into accepting relevant technologies and modes of education on hich is built the entire structure of nuclear terror So ıng as this structure of nuclear terror, whether defin- l as mutual deterrence or equal defence, and the ·chnological imperialism that goes with it are not ismantled, there can be no relevant strategy for a :w economic order or a global humanistic education ,stem.

The NIEO is supposed to be based on the prin- ple of inter-dependence, a term which has come to : grossly abused. On the one extreme, it may mean :cognition by the affluent developed nations of their :sponsibility towards those whom they exploited in ıe past or for whose development they want to make ıeir genuine contribution without harbouring the gotism of philanthropy. On the other it has come › mean a new form of dependent structure, a kind f neo-colonialism which in many ways is worse than ıe old. No matter which of these two definitions of ıterdependence is accepted, both assume that the :onomic gap between the developed and the develop- ıg countries cannot be narrowed significantly. Genu- ıe interdependence cannot even be conceived of ıthout drastic international economic reform in favour f the have-nots. So far the only report which has ıckled this problem is Tinbergen's Rio Report, which nfortunately has become a victim of conspiracy of lence because its basic recommendation is that the :veloped countries must aim at zero growth except ıat which is the result of increase in productivity and :chnology.

In no other field have the ideas of post-colonial or :ocolonial interdependence been so easily accepted as in the field of education. As a matter of fact, a whole-sale transformation of value system has taken place from the developed to the developing countries creating thereby a situation of total cultural d... and elite alienation. To some extent, the desire for excellence has also been stimulated, but with it ha... come the disrupting and irrational importation of affluent want-patterns, elitism and easy acceptance of the superiority of the Western civilisation.

Slowly but imperceptibly, allocation of resourc for different levels of education in the developir countries has created a situation of utter inequality- excellence at the top and gutter at the bottom. Educa tion, instead of equalising opportunities, has furth reduced them for the vast masses. Interdependen which produces such results cannot be the basis a NIEO.

After inducing the developing countries to accept t Western patterns of education and inviting some their products the developed countries now have bolt the door against others In spite of all their technol gical revolutions, the developed countries have n been able to solve their unemployment proble Because of increasing unemployment, they deny ope ings to the developing countries for their products well as the unemployed who want to migrate to the countries.

As already mentioned the link between educati and world order is built indirectly through develc ments in an economy. But the corelation between t level of education and economic opportunities is decreasing nature Even in the developed countr where opportunities for education have reached v masses, the relation between economic opportunit and education has become increasingly blurred. developing countries, where educational opportuni are still confined to a small percentage of the popu tion, the pattern of growth and the structure education have left a large reserve army of educated unemployed, thus weakening the relations between education and job opportunities. In sucl situation one does not know how the prevail educational systems can help manpower planning a new international economic order.

A fundamental change has taken place in in national economic relations. It is no longer true the economic growth in the developed countries helps to create a higher growth rate and higher employ- ment in the developing countries. It is equally untrue that the unemployment problem of the developed countries can be solved by shutting out goods and

13 DPD/79—2

people from the developing countries. The developed countries face a structural problem in unemployment which they are refusing to solve in a manner that would require basic changes in their distribution system. This is one of the biggest barriers in the creation of the NIEO and it has a bearing on the educational system of both developed as well as developing countries.

To reduce the pressure of the current international order on their educational system, the developing countries will have to completely reorient their educational system towards providing a direct link between word and education at all levels from the schools to the universities. It is so because the history of the Western system reveals that they established only an indirect relation between work and education and that is how their development could proceed in a laissez-faire situation. The mistake that many developing countries have made is that while opting for economic planning they have thoughtlessly followed the Western pattern and thus allowed their educational system to become unplanned and anarchic.

In countries with vast population and large under-developed resources, the link between work and education, rather between education and general development has to be direct and established through proper planning. Only at very high levels, where fundamental research is involved, can the two be indirectly related.

So long as the economic systems are evolved to control the destiny of the individual without considering the human needs and goals, no educational pattern can seriously contribute to the building up of a better world order because in this scheme of things the individual freedom of choice is not recognised. As a necessary corollary the freedom of choice of a nation, particularly a small nation, is also not recognised and hence there is little possibility of linking the two in any positive fashion.

From the point of view of the new economic order it is important to consider whether education is a basic need or a social want or an instrument for achieving excellence. There has been considerable confusion about these three aspects. Those who believe in education as an equalising instrument certainly insist on education being a basic need. But unless this basic need is combined with the whole variety of other needs, education is bound to degenerate into a social want, ultimately ending up in a system yielding no productive or socially useful results.

The crux of any educational system is the attit of the adolescent and the young. Does it help tl to become non-alienated members of their societi There is a growing disillusionment all over the wo of the young with their respective educational systei so much so that according to J. D. Salinger, American author, many young people in Weste countries look upon the world as made up of phone and prostitutes, the latter word being defined those who sell their talents and individualism in ord to be affluent members of a materialistic societ The protest of the youth against their education system is, in fact, a part of the general revolt, bo against their socio-economic system and the glob world order.

Most of the youth movements in the West clai to be radical in one sense or the other. This cultur radicalism has been quickly imported by the develop ing countries and many of the institutions of highe learning really debate issues which relate to the cul tural problems of the West than of their ow societies. The positive impact has been an attempt t question the established status quo and the policie and models of economic development in these coun tries. The negative impact has been to look for solution further towards the West. Nevertheless, revolt against the Western aristocracy born as a result of technology and bureaucracy or meritocracy is spreading everywhere. The real question is whether the youth is prepared to revolt against the existing order in a manner which would amount to their relinquishing some of the privileges. Without this sacrifice, there can be no hope for a better world order nor for an educational system which will equa lise opportunities.

The real link between NIEO and the educational system is established through what Tinbergen has called the 'third level education' namely, the university or higher education. This education is the source of most creative power, strategic situation, economic and manpower planning. Any international order will have to operate through the medium of this level. Again such a link can be both positive and negative. If those who belong to this level can show their responsibility in terms of acquiring the right knowledge, adopt it for local needs, go in for self-reliance and above all build links between the secondary and primary education, they can help both their own nations and create the basis and climate for a just international order. But if they become selfish and look after their own elitist interest, thereby looking upon technical excellence as a private matter, they will then generate more inequalities ,authoritarianism

and international dependence. Besides, they will serve as a reserve army of trained men, who through brain or subservience to a few multinational will destroy the possibilities ot creating a just new international economic order. It will just not suffice if the international institutions take a few of the experts from the developing countries and place them in important positions of decision making.

One of the most difficult problems that the developing countries have been facing in respect of technology is the choice of technologies needed for their development on right priorities. The pattern of investment and industrialisation are inseparable from the choice of technologies and vice versa. The single most important conduit pipe for the transfer of technology is the people coming out of this third level education. It has been noticed that the industrialists of the developing countries like to go in for easy options of collaboration and turn-key projects, a method which absolves them of the responsibility of building a national R&D and technological base. In this system, they do involve and take in a certain number of people from the technical institutions within the country. But as long as their technologists are never given responsibility for developing a self reliant autonomous industrial system, third level education will remain subservient to the prevailing order through imported technologies which in fact means abdication of the right to exercise choice of technology.

There is not much difference between the old Lockian theory and the modern theory of meritocracy. Both recognise the innate differences in personal qualities and also emphasise that through education, despite these differences, social equality can be created enabling those who develop merits to go up the ladder. The natural aristocrat of Locke and the modern technocrat are not very different from one another. The only difference so far as the developing countries are concerned is that a new class of parasitic aristocracy is being created at the social and political level. Between old fashioned capitalism and modern meritocracy stands a whole class of parasites who have made education not only social want but also an instrument for a new kind of authoritarian populist politics.

Any attempt to create equality through education within the accepted framework of gross inequality, both national and international, is doomed to fail and more tragically may become a kind of self-delusion. The soapy waves of self-justification seen at the UNCTAD at Manila should convince us more than enough that the first step needed is not to link but to delink our educational system from the prevailing economic order. We should restructure an autonomous model both of education and economic development and then move towards building a link with the NIEO, no matter whatever shape it comes to take finally.

In view of the failure of all the strategies of development adopted since the fifties there is an increasing emphasis on providing minimum needs as a very high priority both in national and international planning. It so happens that everyone includes education as a part of a minimum needs programme. This approach is very much similar to the earlier approach of education as an instrument of equalising opportunities. The new approach, however, is better in the sense that it links education with other basic needs. But there are two dangers of accepting this as the dominant strategy of development; (a) it de-emphasises the importance of accumulation of capital for higher growth rate and (b) ignores the problem of economic distribution. Unless the strategy of economic growth and the strategy of minimum needs programme are linked together, the developing countries will always remain subjected to the strategies of those who dominate the present international economic order.

The developed countries are pushing the strategy of minimum needs programme as it requires minimum international inputs and thus, reduces the responsibility of the developed world to the developing countries. Secondly the programme is supposed to reduce the anger of the masses to some extent. The ruling elite of the developing countries rightly reject this approach on the first ground but are so afraid of their own masses and of taking the responsibility to provide the minimum to them that they would prefer to have an economic order in which a stable relationship is established between the elite of the developed countries and the developing countries. Thus education as a part of new minimum strategy alone cannot alter the behaviour of economic powers in the world.

If minimum needs strategy is to be integrated with growth strategy, it will require even larger transfer of resources from developed to the developing countries. But with regard to transfer of resources, the UN has already reached a situation of complete deadlock. No developed country is seriously interested in giving one per cent of its GNP which even if given will make no dent on the present or growing inequali-

Contd. at page 27

Education of Children in India

Position and Prospects

Dr. S. N. Saraf

Chief of Education Division, Planning Commission

THE idea of compulsory education was put forward in India as early as 1838. Steadily a strong and general demand grew up that the country must prepare a phased short-range programme for the provision of free elementary education for all children up to the age of 14 years. Inspite of many attempts the results obtained were meagre. The need for concretising the idea of universal compulsory education figured prominently in the thinking of the people on the attainment of Independence in 1947. It was in response to this demand that the Constitution of India, adopted in 1950, contained the following Directive Principle of State Policy .

> "Article 45 : The State shall endeavour to provide, within a period of ten years from the commencement of the Constitution, for free and compulsory education for all children till they complete the age of fourteen years"

Elementary Education and Five Year Plans

The expansion of elementary education, conforming to the age-group 6-14, entered into its own in the Five Year Plans for national development which were initiated soon after the passing of the Constitution in 1950 The First Five Year Plan (1951-55), in its Report, mentioned that "the provision of free and compulsory primary education, is the first necessary step towards establishing equality of oppoitunity for every citizen. At this stage, we deal with the entire human resources of the country, and if it is properly handled, a way can be found for the full development and most effective use of these resources." Viewed on the whole, with massive investment in successive development plans, there has been unprecedented expansion. The expenditure on elementary education increased from Rs. 300 million in 1950-51 to Rs. 14,000 million in 1977-78. During the same period the enrolment in elementary schools (classes I-VIII) increased from 22 million in 1950-51 to 93 million in 1977-78. The number of elementary schools increased from 2,23,000 in 1950-51 to 5,60,000 in 1977-78. By 1982-83, the end of Sixth Five Year Plan, the enrolments are projected to increase to 125 million

Review of Progress 1951-78

Enrolment Expansion : Substantial progress has been made in the expansion of elementary education in the country. Table I illustrates the progress of elementary education since 1951

Enrolments have increased Percentage increase over 27 years has been 304 Unfortunately the growth rate has not kept pace with increase in population. Thus we find that provision of schooling facilities increased from 32 per cent in 1950-51 to 69 per cent in 1977-78

Areas of Concerns . Major areas of concerns in the field of elementary education are too many. However, a few which emerge clearly are : separately populated habitations[1] have not been covered by and large ; lack of educational facilities are particularly noticeable in respect of Scheduled Castes and Scheduled Tribes[2] ; schooling facilities provided for children in the age-group 6-14[3] utilised by the children of other age groups ; wastage and stagnation[4] rates continue to be the same as in past ; attendance-enrolment ratios are low (between 60 to 70 per cent) ; there are considerable variations in the availability of educational facilities among the States[5] and also between different districts within the States. Quality of education has not registered much improvement as the main accent has been on extension of facilities.

Perspective in 1978-83

The Policy Frame : Among the six major changes of Policy indicated by Planning Commission in the document : Draft Five Year Plan 1978-83, one

Table 1 Progress of Enrolement at Elementary Stage

Classes	Enrolment (millions) 1951	1966	1969	1974	1978	Percentage of the Corresponding age-group 1951	1966	1969	1974	1978
Classes I-V										
Boys	13.76	32.18	33.22	39.80	43.30	60	94	96	101	102
Girls	5.39	18.29	19.69	24.30	28.00	25	57	60	66	68
Total	19.15	50.47	52.91	64.10	71.30	43	77	78	84	85
Classes VI-VIII										
Boys	2.59	7.69	8.92	10.70	12.70	21	44	47	48	51
Girls	0.53	2.85	3 68	4.60	6.00	5	17	19	22	27
Total	3.12	10 54	12.60	15 30	18.70	13	31	34	36	40
Classes I-VIII										
Boys	16.35	39 87	42 14	50.50	56.00	46	79	79	82	83
Girls	5.92	21.14	23 37	28.90	34.00	18	43	45	50	54
Total	22.27	61 01	65 51	79 40	90.00	32	61	62	67	69

[1] Educational Survey of 1973-74 gave this information: 90 per cent of 5,47,000 elementary schools were in rural areas with 74 per cen of the total enrolment, primary schools/sections serve the needs of over 95 per cent of the rural population in large habitations of the population size of 500 and above. 768,000 habitations have primary school/section within a distance of 1 5 kms, 542,000 habitation had a middle school/section within a distance of 3 kms

[2] In 65,715 habitations inhabited predominantly by the Scheduled Cas'es ; 14 754 which has a population of 300 and 6789 with a population of 300 and more had no primary school within a walking distance of 1 km ; of the habitations where the Scheduled Tribes constituted half of the population, only 43 per cent had a primary school.

[3] In classes I-V, which correspond to the age-group 6-11, nearly 23 per cent of the actual enrolment was of children below 6 years or over 11 years of age. In classes VI-VIII, 41 per cent of the enrolled children were either below 11 years or over 14 years of age.

[4] The rate of stagnation, drop-out is 60 per cent between classes I-V and 75 per cent in classes I-VIII.

[5] At the end of 1977-78, the proportion of boys and girls in the age-group 6-11 enrolled in classes I-V ranged from 115 per cent in Tamil Nadu to 67 per cent in Rajasthan as against the All India average of 85 per cent.

Policy Frame relates to universal elementary education. It states :

> "A far greater priority will be given to the programme of universalizing elementary education in the age group 6-14 which will be assigned about half the total allocation for education in the Plan period. Several major reforms will be introduced with the object of increasing the usefulness of the earlier programme which had large drop-out rates and were known for their ineffectiveness and inefficiency. There will be special emphasis on the enrolment of girls and children of weaker sections of the community such as scheduled castes, scheduled tribes and landless agricultural labourers"

Flowing from his policy frame, definite targets and specific Programmes have already been included in the Five Year Plan 1978-83.

Targets and Strategy It is now proposed to accelerate the pace of expansion considerably and to fulfil the directive of Article 45 of the Constitution in about ten years. From this point of view, the following new strategy is proposed to be adopted :

Emphasis on attendance targets : The emphasis on mere "enrolment" has concealed inflated enrolments and large drop-out rates of about 60 per cent between classes I-V and 75 per cent between classes I-VIII. It is, therefore, proposed to lay down 'average attendance in addition to 'enrolment as a more legitimate basis for the assessment of progrorss provision of teachers and to prescribe specific targets for annual enrolments in class I, class V and class VIII Special efforts would also be made for reduction of wastage and for monitoring of programmes for that purpose.

(ii) *Rational location of institutions* : In rural areas 80 per cent of habitations having 93 per cent of the total rural population have a primary school within 15 kilometres and over 50 per cent of habitations having 72 per cent of the total rural population have a middle school within 3 kilometres. Careful plans will be prepared for location of new primary and middle schools and all the new institutions required will be opened on a priority basis during the plan period.

Accent on intensive enrolment : The present strategy adopted so far to universalize elementary education to enrol additional children in class I (all these are expected to attend on a full-time basis)

at the beginning of such school year will be continued and expanded. Every Primary school will be expected to prepare census of all children in the age-group 6-7 and enrol as many of them as possible in the beginning of each school year through specially organised enrolment drives. It is thus hoped that by the end of the plan period, non-enrolment of young children in class I will almost be eliminated.

(iv) *Multiple time entry and part time non-formal education* : The present system of single—point entry and exclusively full-time education has two serious weaknesses; it gives no oppurtunity to grown-up children to join school if they desire to do so, and it leads to large rates of drop-out because grown up children who have to work are left with no option but to discontinue education. It is, therefore, proposed to introduce two major reforms :

(a) A multiple-entry system will be adopted and special condensed courses on non-formal education will be organised for grown up chlidren in the age-group 9-14 who have never been to school or dropped out so early as to become illiterate again. Special emphasis will be laid on programmes for children in the age-group 11-14. It has been the experience that these children can be taken to the level of class V in 12-24 months.

(b) A system of part-time, non-formal continuation education will be designed for children who enter the primary school but drop-out later, generally in the age-group 9-14. The rule will be that every child in the age-group 6-14 shall attend school, on a full-time basis if possible, and on a part-time basis, if necessary for those who cannot, mainly for economic reasons, attend full-time education. This will reduce drop-outs and wastage very greatly. A fairly large pool of tested learning packages to suit children according to their specific requirements been prepared and considerable experimentation in this direction has already taken place. It is being felt increasingly, among other things, that the needs of the children at the elementary stage, in terms of content, methodology, place and timings are so varied that there is a need to evolve a very flexible system of education which lends itself to as many adaptations as there might be situations and needs.

Targets during 1978-83. It is expected that, as a result of the programmes mentioned above, the enrolments in elementary education during the Plan will increase by 32 million (22 million in classes I-V and 10 million in classes VI-VIII) as shown in table 2

Table 2

Enrolment targets at Elementary Stage 1978-83

Classes age-group	1977-78 (Position)	1982-83 (Likely Position)
		(figutes in millions)
Classes I-V	71.30 (85)	93.30 (110)
Classes VI-VIII	18.70(40)	28.70(57)
Total·	9 00 (69)	122 00(90).

(Figures within parenthesis indicate percentage to the relevant age-group)

A very large proportion of these would be in part-time non-formal education. The enrolment increase would mean educational facilities for 110 per cent of the children in the age-group 6-11, 57 per cent. of the children in the age-group 11-14 and 90 per cent of the children in the age-group 6-14 by 1982—83

Spread of Education among weaker sections : The vast bulk of the non-attending children at present consists of girls, children of scheduled castes and tribes and children of other weaker sections like landless agricultural labourers. Special efforts will be made to enrol them. These will include: appointment of more women teachers, free supply of text-books or even clothing where necessary, provision of mid-day meals where necessary and possible under the Revised Minimum Needs Programme, establishment of ashram schools especially for tribal children and children in sparsely populated areas, intensive educational propaganda among the people, setting up separate targets for the enrolment of girls and children of scheduled castes and scheduled tribes and so on. The imbalances of development between boys and girls and different social strata will thus be greatly reduced.

Reduction of regional imbalances : An attempt will also be made to reduce imbalances in regional development Every State will be requested to ensure that special efforts are made to rapidly identify backward areas and to promote expansion of elementary education therein.

Action research : Educational research related to problems of taking education to sections which have so far been by passed is a neglected area. Action oriented educational research and experimental projects of intensive educational development as part of integrated area development programme will therefore be given special encouragement and support.

Organisation and Administration supports : The expansion visualised in the programme is unprecedented, whether considered in absolute figures or in terms

of percentage increase. It has also to be in areas and for population groups which contribute the hard core of the poor and the backwards in the country. It will, therefore, need great organisational effort and administrative support. The campaigns of adult education that are being simultaneously organised will be of help in this task. Attempts will also be made to organize a mass movement of parental education to support this programme. The elementary school teachers will have to play a vital role and their services may be utilised not only for teaching the children who come to school but also to bring non-attending children to school and to see that they do not drop-out. The supervising machinery will be adequately strengthened and the help of other government departments will be enlisted.

Qualitative Improvement : Programme of qualitative improvement in elementary education helps the programmes of expansion by enhancing the attracting and holding power of schools. It is, therefore, proposed to emphasize and to allocate adequate funds for several programmes of qualitative improvement such as introduction of socially useful productive work, curricular reform so as to link education to the environment and to make it relevant and interesting to children, relating school vacations to climatic and agricultural conditions, provision of equipment and provision of cheap but effectively useful buildings constructed, as far as possible, out of local materials by local communities, improvement in the quality of school books, adoption of dynamic methods improvement in the quality of school books, adoption of dynamic methods, of teaching and evaluation, emphasis on better teaching of the basic sbjects of language, adaptations as there might be situations and needs. arithematic and science, creation of a scientific awareness and inculcating a scientific attitude, better pre-service and in-service education of teachers and improvement of supervision.

Financing of the Programme : Clearly, so large and unprecedented an effort will need a much greater investment than in any earlier plan. This demand is proposed to be met through three—pronged drive of economy in unit costs, more effective utilization of existing resources, and increased allocation.

(a) Unit costs in elementary education will be considerably reduced because of the adoption of the programmes of part-time and non-formal education. They would also be reduced through the adoption of the double—shift system, at least for classes I and II.

(b) There is an ineffective use of available resources at present because of overlapping and duplication involved in bad location of elementary schools and irrational posting of teachers. There is evidence to show that in many areas existing facilities are grossly underultilied. A sustained and intensive effort is needed to correct these deficiencies. This will make it possible to increase the enrolments without proportionate additional staff.

(c) The allocations to elementary education is being increased substantialy. In the Plan it is proposed to allocate Rs. 9000 million, or nearly 50 per cent of the total allocation, to elementary education (which is roughly about three times that during 1974-78).

As a result of financial allocations on the Plan side it is expected that the total allocation for elementary education may increase from about Rs. 14,000 million in 1978-79 to over Rs. 20,000 million in 1982-83.

The National Policy for Children of 1974 mentions that "the nation's children are a supremely important asset. Their nurture and solicituda are our responsibility". In view of this, high priority, in national development, has been accorded to clementary education. It has also been included as one of the important components of the Revised Minimum Needs Programme (R. M. N. P) in the Sixth Five Year Plan. The R. M. N. P. is intended to fulfil the premise of providing essential infrastructure and social services, which the public sector alone can supply, to the weaker sections of the population, particularly in the runral areas. The Government is committed to a more determined effort of the universalisation of elementary education for all children up to the age of 14. With this commitment in view it is envisaged that all children between the ages of 6 and 14 should be in schools by the end of next decade. Eight per cent of the total Central assistance to State Governments is earmarked for family welfare (planning) programmes and released on the basis of performance and success in family welfare. To encourage girls'education at the middle stage (classes VI-VIII), which could directly and indirectly promote family welfare (planning) programmes, ten per cent of this assistance is released on the basis of good performance in enrolling additional girls in schools. In Tribal and Hill Plans, specific provisions have been made for promotion of elementary education and necessary incentive to enable children belonging to these sections and areas to attend schools. Similarly other developmental departments and agencies are promoting elementary education of specific target groups.

The universal provision of elementary education, as contemplated, will make a significant and direct contribution in the improvement and development of the status of children in India.

Making The 'Weaker' Strong

D. Tripathy
Project Evaluation Officer, Govt. of India, Bhubaneswar

IT was a paradox that in spite of the substantial increase in agricultural production due to the 'Green Revolution' the percentage of population below the minimum required level of consumption in rural India went up by about 40 per cent during the last decade. Those who studied the impact of the 'Green Revolution' in depth opined that the adoption of improved techniques and the spread of new seeds and fertilisers tend to benefit the middle income and rich farmers than the poor, because the rural poor belonging to rural labour households and small farmers operating land upto two hectares work more as individuals than in organised groups and "seldom have access collectively to the technical and financial assistance provided by the Government".

The sophisticated development models viewed the cityward migration of rural poor as a healthy sign for it would lessen the pressure on land and provide cheap labour to the industrial sector. In India, unfortunately, this migration led to the increase in urban poor Myrdal observed, "the cityward migration of the rural poor usually implies an increase of squalor rather than a contribution to economic development". Further it was observed that, "any foreseeable acceleration in the pace of development may not provide enough jobs to make even a slight dent of rural unemployment and poverty". So the evergrowing poor have to be absorbed in the rural sector

The Government of India made the institutional innovation in the form of Small Farmers' Development Agency to provide necessary facilities to the rural poor to improve their lot.

This institution having at its disposal substantial fund and flexible procedures, was expected to help the small and marginal farmers in time and according to the felt needs.

About 26 lakh cultivators constituting 76 per cent of the total cultivators of the Orissa State operate land below two hectares and are, therefore, included in the small farmer category Not only small farmers are poor, they are also at a disadvantageous position vis-a-vis big cultivators to have access to credit, improved seeds and even at times to extension.

SFDA Scheme

The Government of India allotted three Small Farmers' Development Agency projects and two MFAL jects initially to Orissa and later on two more SFDA projects. It would be observed from statistics that the highest number of beneficiaries have benefitted from the minor irrigation schemes in the form of dugwell and tubewell projects. Ganjam occupies the first position so far as the dugwell scheme is concerned. The total number of beneficiaries since the inception of projects are 2,08,138

The macro variables sometimes do not provide the real picture regarding the extent of benefits accruing to the beneficiaries Micro studies at operational levels are expected to provide valuable information regarding the objectives fulfilled through the operation of a scheme or a project.

The district of Ganjam receives the lowest rainfall of all the districts in Oirssa. It was felt that the irrigation wells would provide enough water for small and marginal farmers to have multicrop pattern on their lands thereby increasing their income substantially. The non-viable farmers were expected to become viable through this scheme.

The Department of Analytical and Applied Economics, Utkal University, Bubaneswar conducted a micro level study on the problems of marginal farmers and small farmers of the village Jharedi Radhagovindapur in the district of Ganjam. Out of 76 households 75 depend upon cultivation and operate land below five acres. The village was completely unirrigated before the SFDA was launched. The crops were to depend entirely upon the vagaries of rainfall which was highly erratic, unequal and most of the times below the normal rainfall of the State. It was found that the village had enough ground water potential to provide irrigation facilities in the village.

Under SFDA Scheme, the Berhampur cooperative Central Bank took the bad to the rescue of the small and marginal farmers and 48 dugwells were sunk At the beginning, everyone had doubt about the success of the scheme Being encouraged by the success of 48 dugwells in the area, more small and marginal farmers have taken loans to dig more wells in other parts of their fragmented lands

Dug-Well Scheme

Irrigation through dugwells have completely changed the cropping pattern followed earlier Before irrigation the farmers were hardly growing any winter or summer crop. Owing to assured and timely supply of irrigation water through 'Tenda' (a manual operated device) at present farmers are growing very high valued cash crops like chillies and vegetables during summer. This has resulted in substantial change in their income. Both the small and marginal farmers have benefited substantially from the dugwell scheme. The annual income of the farmers increased from Rs. 1000 to Rs. 2500/- on an average. It is heartening to note that only the well has increased the income of the weaker section, it has also infused a sense of confidence in the minds of the weaker sections, as a result of which they use more of modern inputs and agricultural implements. A part of unemployed labour also found employment after the introduction of the Scheme.

The dugwell scheme has mobilised disguised unemployed rural poor by providing onfarm work during the off season. It has also provided a permanent infrastructure for the improvement of traditional agriculture. The scheme has not only infused confidence in sense of participation in the implementation of development programmes which is a pre-requisite for the hearts of the small farmers it has also created a success of our plans.

All Lost but not Courage

R M. Mehta

Field Publicity Officer, Rajkot

LIVING is an art One must have the right attitude It is true particularly when a man is financially bankrupt and physically handicapped like Jayant.

Jayant, 18, of Neekagva village in Kalavad block of Jamnagar district, is the youngest of four brothers who lost their father about two years ago. Like any other boy he spent his childhood for sometime climbing trees and playing seek and hide For him life is not just an empty dream. But later when he was in primary classes he suffered from polio. Both his hands were rendered useless But did he get discouraged ? No. Not at all. On the other hand he thanked the Almighty for giving him good legs. Slowly he started scribbling with his foot and soon mastered the art. Now he writes with his foot as speedily as one, with hand and neatly too.

He persued his primary and secondary school studies by writing with foot. Recently he appeared at New S.S.C. examination at Rajkot. The Chief Supervisor of the Examination Centre, noticed his plight and offered the assistance of a scribe. But Jayant, politicly refused the offer and wrote his answers in his usual way by holding the fountain pen between the first two fingers of his right foot.

Certainly Jayant will not relent until his goal is reached

Want to build a house?

K. V. Varghese
Head,
Deptt. of Economics, Spicer Memorial College,
Pune.

THEN you need money. Finance for the purchase and development of site, for building materials and labour is required. Moreover you want money for meeting the annual charges for the upkeep and maintenance expenses inceluding rehabilitation of houses, taxes, interest, and amortisation charges on capital and covering risks involved in long term housing investment. The fact that housing is an extraordinarily expensive commodity which requires heavy capital outlay testifies to the vital role finance plays in housing sector

Housing is a function of finance for, housing sector is indissolubly linked with financial sector. "Housing Finance" is a factor of production quite distinct from labour, materials and risk taking. The price of other factors involved in house construction need to be paid mostly in cash at the time they are used and hence the crying need of housing is finance.

Bottomless Pit

Problems of housing finance are many and highly complicated. Firstly, housing finance has a long-term character because the product involved is not readily saleable and does not yield monteary return as in agriculture or industry. Personal saving usually can cover only a small fraction of the total cost and the balance has to be necessarily covered by long-term credit. Secondly housing finance is mortgage-oriented. Housing needs huge capital expenditure which is much more than the life time earnings of most of the households. So the only alternative before a house builder is to resort to mortagage loan. Charles Abrams, the United Nation's expert rightly pointed out that a mortgage system is accepted as essential almost every where, and such being the case one has to conclude that Polonius advice. "Neither a borrower, nor a lender be" would, if followed, make it impossible for most people to own their home. Thirdly, there is always imbalance between the supply of and need for housing finance. That is to say the supply of housing finance can never cope with its need. This universal phenomenon of housing finance probably is the reason for the World Bank to maintain the feeling that housing is a "bottomless pit". This imbalanced situation is prevalent even in the rich countries and this is perhaps, the most perturbing factor in poor countries like India. Fourthly, housing finance is not as self-Liquidating as agricultural or industrial finance Agricultural or industrial investment yields quick returns and one can look for a stream of further income as a source of repayment, but in housing it is not In housing, if rented after the completion, the income follows slowly and leisurely and if occupied by the landlord himself no monetary income follows Therefore, housing finance is more stick and much more sensitive to the level of interest rates than agricultural or indusrial finance

Risks in Financing

Over and above the foregoing problems housing finance bristels with several risks. The immoveability of house on land may give rise to certain external factors which adversely affect the value of the product. For example, with the passage of time the architectural style may become out of date or the location of the house may become notorious or centres of day-to-day services may not be nearby or a slum area may develop in the vicinity All this may erode the value of the house Because of these inherent extraneous peculiarties house becomes a poor security. Hence, analysis of the security which a financer insists on is beset with problems, complexities and risks. Hence, lenders hesitate to advance money for housing

Secondly, there is risk in the affirmation of borrower's legal position. Possession does not indicate ownership. In certain cases the creditor, in case of default, finds it difficult to establish the debtor's ability to provide the security. Ownership of house with compound is transferred not by change of possession, but by the passing of legal documents called a "deed".

All these add and compound the risk of lending. Thirdly, there is risk in tracing the evidence of title of ownership. In India because of the prevalence of inheritance and other laws it is difficult to trace out or ascertain whether the full ownership of the house is on the borrower and to make sure that no other claims to the property are outstanding. These risks cluster around housing finance and hence housing does not have the normal facilities of finance available to either industry or agriculture. Our experience indicates that housing needs are always relegated to the background.

Requirements of Housing Finance

Since finance is the crux of the whole housing problem it is advantageous to know its requirements. It is estimated that a prodigious sum of Rs. 36614 crore would be required to wipe off the entire housing backlog as revealed by 1971 census. The working Group on Housing, on the basis of the housing backlog as revealed by 1961 census, estimated the financial needs at Rs. 30,000 crore. Another Rs. 3551 crore would be required to meet the annual deterioration of housing stock. That is to say, sums of astronomical size are required by the housing sector in this country.

Availabilities of Housing Finance

Funds for housing flow from various sources like LIC, HUDCO, Banks etc A close analysis of the allotment of funds for the public and private sectors reveals that the share given to housing is not only a small fraction of their total funds, but also it does not appreciate in proporation to the outlays in various Five Year Plans. Another striking, but perturbing feature is that the contribution of the public sector in relation to that of the private sector is quite negligible. On the whole we can find a steady and persistent drop in the funds alloted to housing both the sectors from plan to plan. These can observed from the table below.

LIC appears to be the largest single source funds for housing. Its total contribution to housi in India by way of loan to state governments, Ap cooperatives, Housing Finance Societies and Loa under its own schemes and its own constructi activities as on 31st March 1976 amounts Rs. 147.21 crore. LIC's housing investment as a whc shows a healthy and encouraging trend. Still there room for improvement for making it cheap, reduci its cumbersome procedure and delay. In view of t urgent need of Housing finance it ought to be giv more importance then the Central Securities whi at present occupies the top most priority.

As per the recommendation of the Conference Housing Ministers held in 1970, a revolving fu of the order of Rs. 200 crore was built up throu Central Government allocation, support from fina cial institutions and mobilisation of private savin The total advances made by it during the first fo years of its working amounted to just about Rs. (crore that is Rs. 16 crore a year on the averag But since then its investment has been stepped considerably and it comes to nearly Rs. 28 crore p year.

Banks lend very negligible amount for housing. Sin 1950, the banks have given an annual average about Rs. 7.65 crore only to housing which com to 1 to 1.5 per cent of the total investment. Recent on Cumulative Deposit Housing scheme of 5 to years, the Syndicate Bank started giving loan f housing purpose equal to double the amount payat to a person on maturity of deposit. At present t government can rope in the commercial banks f boosting housing investment because they are flush with funds.

Investment in Housing and Total Investment in Five Year Plans by Public and Private Sectors

(Rs. in crore)

	First Plan			Second Plan			Third Plan			Fourth Plan			Fifth Plan		
Sector	Housing	Total	Percent	Housing	Total	Percent	Housing	Total	Percent	Housing	Total	Percent	Housing	Total	Pe ce
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1
Public .	250	1560	16	300	3659	8	425	6100	7	625	13655	5	594	31400	1
Private .	900	1800	50	1000	3100	32	1125	4300	26	2175	8980	24	3636	16161	22.
Total . .	1150	3360	34	1300	6750	19	1550	10400	15	2800	22635	12	4230	47561	8.

The foregoing analysis highlights that there is a dearth for financing construction of houses. In urban areas there is some effort in this respect whereas the rural needs are entirely left out. Against the enormity of financial need, the supply is like a drop in the ocean which reminds us of the big leeway to be made up in this respect.

Potential Financing Agencies

Are these Agencies enough to cater to the housing finance needs ? This vital question leads us to an appraisal of the potentialities of these agencies which in turn lands us in certain lacuna of the present system.

The most important lacuna in the existing finance system is the lack of a country-wide institution to combine regular saving scheme with provision of housing finance in adequate amounts on reasonable terms. Also, our system is conspicuous by the absence of adequate institutional finance, mortgage market, loan insurance scheme etc In America and other developed countries housing finance is buttressed by these fecilities. Further more, in India housing finance does not enjoy certain monetary and fiscal reliefs which are enjoyed by some advanced countries like the U.S.A., Japan and the U.K.

The analysis of our housing finance system indicates that the whole system revolves around a nominal sum given out by the government, LI C. of India and the Private Sector, though we come across a plethora of parasitical type of moneylenders in housing field. For instance, for social housing schemes even the Government depends on the L.I.C. The HUDCO, the Housing Boards and the housing co-operatives also heavily lean on L.I.C. for finance. The entire system may seem grandiose and may give a rosy picture but in reality the increase in credit issued by one agency is likely to be accompanied by a decrease in the flow of credit from others. It is possible that part of the housing finance provided by the same agencies represents credit raised by other agencies.

This does not lead to any net addition to housing credit or finance. The result is that, in effect, the net flow of housing finance or credit from the national money market via these agencies may be small because if the blanket is too short, to cover the head would be to leave the feet bare and vice verse.

All this speaks volumes for the urgent and inevitable need for strengthening institutional finance. This institutional finance will act as a healthy lever for mobilisation of household savings for housing. In view of the peculiarities of housing finance the Government should attach higher priority and allot larger funds for housing purpose. Expanding education and health and leaving housing to its fate to find finance is like putting the cart before the horse, for housing should come first i.e., before hospitals or schools. Without proper housing facilities children cannot survive and the need of hospital or school does not arise. So in order of proirity, housing should be given first and higher priority, for, it preserves the quantum and quality of human resources much more than hospitals or schools All these warrant greater finance for housing from Government's end □

Bank Advances up 11 Times

THE first decade of nationalisation witnessed an elevenfold increase in the bank advances to the priority sector. The number of branches in semi-urban and rural areas have also shown a four times increase during the period. However, the ratio of rural banks to those in urban areas has remained almost identical. The total advances of public sector banks to agriculture, small-scale industry, road and river transport, retail trade etc., in the priority sector increased from Rs. 441 crore in June 1969, on the eve of nationalisation to Rs. 4,927 crore in March 1979. This marks an increase of about 117 per cent. These advances accounted for 31.9 per cent of the aggregate advances, compared to 14.9 per cent in June 1969. These priority sector advances included Rs. 2,072 crore in the agriculture sector, Rs. 1,964 crore in the small-scale industries and Rs. 890 crore to other priority sector. The advances acounted for 33 per cent of the bank's credit. On July 19, 1969, the night of nationalisation, the total number of branches of the State Bank, its subsidiaries and the 14 nationalised scheduled banks was 6,633. Of these, 4,159 were in rural and secmi-urban areas and the remaining 2,474 in urban, metropolitan and port towns. By December 31, 1978, the number of rural and semi-urban branches had risen to 10,170 and that in towns and urban areas to 5,163 making a total of 15,333 branches. The total profit of the public sector banks for 1977 was Rs. 36.47 crore. Of this the profit made by the State Bank and its subsidiaries was Rs. 8.87 crore and of the 14 nationalised banks Rs. 27 crore.□

Economics in the Energisation of Irrigation Pump sets

A. R. Patel
Bank of Baroda, Bombay

THE Government has initiated several steps to increase farm productivity and agricultural production. Development of irrigation facilities has, therefore, been accorded highest priority. It is estimated that the ultimate potential for major and medium irrigation schemes in the country is of the order of 57 million hectares, and that for minor irrigation schemes is around 55 million hectares. The latter is made up of 15 million hectares of surface water and 40 million hectares of ground water sources. The latest statistics reveal that only about 50 per cent of the ground water potential has been so far exploited. The six states, namely, U.P., Bihar, West Bengal, Orissa, M.P. and Assam have 70 per cent of the exploitable ground water resources. This year's budget provides creation of additional irrigation facilities of 30 lakh hectares and the plan for 1978-83 envisages development of irrigation facilities of the order of one crore 70 lakh hectares.

The underground water resources are being exploited for irrigation purposes mostly through sinking of wells and pumping water out by means of application of power (human, animal, mechanical and electrical). The total requirement of the various forms of power during the period 1968-69 to 1998-99 estimated for lifting water on the basis of available data is in the table. During the next two decades, the requirement of electrical energy will increase by about three times the present value. The increase in the amount of diesel fuel required in pumping will be about 65 per cent more than the current consumption. A gradual release of man and animal power from irrigation pumping to more productive works will be there during the period

The projections in table given on page 22 are based on a reasonable level of efficiency in pumping Due to the present day inefficiency in pumping the actual values of energy consumption are higher than the projected values

Operation cost reduction

The scientific studies conducted on the estimation of efficiency, cost of water, net farm returns and the benefit-cost ratios from different sources of irrigation establish beyond doubt the need for energisation of pumpsets at a faster rate. The findings of one experiment reveal that in order to irrigate one hectare of a crop in Aligarh District (U.P.) it took about 11 hours from an electrically operated tube-well as against 54 hours from persian wheel and 84 hours from leather bucket (Charsas) for irrigating one hectare of sown area at a depth of approximately three inches Thus electrical pumpsets are more efficient than traditional sources of irrigation. The cost of energy alone was high on traditional sources of irrigation. The total cost of water worked out at Rs. 22 per 1,000 cubic metres from electricaly operated tube-well as against Rs. 132 and Rs. 220 from persian wheel and charsa run wells, respectively. The cropping intensity under electrically operated tubewell was 594 per cent as against 298 per cent and 113 per cent in case of persian wheel and charsa equipped wells. The net returns on farms irrigated by electrically operated tubewells were about 100 per cent higher than those irrigated by the persian wheel and over 300 per cent by charsa wells

It has, further been establishedt hat electrical motors are cheaper in operation than the oil-engines used as prime movers of pumps. The financial analysis reveals that, if oil engines are substituted by electric motor pumps-sets about 100 kwh electricity will be required for replacing the consumption of 40 litres of diesel. The cost of 100 kwh electricity may not exceed Rs. 25 whereas the cost of 40 litres of diesel and necessary lubricating oil costs Rs. 75. Therefore, the reduction in cost of lift irrigation through energisation of pumpsets is substantial. If the rate of substitution of oil engines by electric motors is 10,000 per year per State the estimated savings in cost of lift irrigation in each State would be as follows :

1 No. of oil engines to be replaced by appropriate size of electric motors. 10,000

2 H.P of oil engines to be substituted by electric motors (considering average size of 8 hp in the range of 5 to 20 hp). 80,000

3 Estimated fuel consumption (litres per year) which can be saved (considering operation period of 1,000 hour year and specific fuel consumption at the rate of 0.25 litres/hp hour i.e. 2,000 litres per oil engines.

20 m litres

4. Reduction in cost of fuel and lubricants at the rate of Rs. 2,500 per year per unit

Rs. 25 crore

This fact also simultaneously establishes that electrification programme will also help the nation through reduction in import of 20 m litres of Light Diesel Oil (L D O.) which will save precious foreign exchange and relieve the farmers from uncertainties, uneven distribution, difficulties of transport etc

Excise duty in lift irrigation

The prices of L.D O. and lubricating oils have been sharply soaring. Such prices include indirect taxes in the form of excise duty etc In Gujarat State alone the value of such indirect taxes as estimated works out to Rs. 25 to 30 crore per year. Naturally, the cost of lift irrigation increases by such indirect taxes. The farmers, therefore, switching over to electric pumps from the dieselised pumps would save about Rs 25 to 30 crore per year in Gujarat alone In fact, the farmers who get benefits of canal irrigation or well-electrification do not have to pay such taxes and hence the farmers with dieselised pumpsets are at a disadvantage. In fact, the farmers having dieselised pumps are eager to instal-power pumpsets on their wells. Moreover, at the current very slow rate of well electrification in the country it may perhaps take 25-30 years to replace the oil-engines used for lift irrigation. This situation needs to be improved by enhancing the rate of well-electrification

A fast rate of well electrification will help the farmers in reducing the cost of irrigation, thereby reducing the cost of production of irrigated crops It will also help the Union Government through reduction in import of crude oil from foreign countries Of course, for such a massive programme of pumpset-energisation adequate arrangements for generation of required electricity will have to be made in a planned manner to mobilise coal, hydro-electric sources and atomic energy.

The plan for 1978-79 envisages a massive addition to generating capacity and the development of the transmission and distribution system. The provision for power sector in 1978-79 has been proposed to be of Rs. 2,217 crore as compared to Rs. 1,925 crore in 1977-78. Also, in view of the importance of rural electrification, the provision under this head has been raised to Rs. 227 crore as against Rs. 195 crore in 1977-78.

The draft sixth plan has also doubled the outlay on the power sector from Rs. 7,016 crore in the Fifth Plan to Rs. 15,750 crore. During the next five years, the addition of about 18,500 MW of electricity generating capacity is visualised. Of this, 13,010 MW will be thermal, 4,550 MW hydel and 925 MW nuclear. As against the draft plan projections, the Ministry of Energy had suggested an addition of 22,000 MW of power generating capacity during the plan-period. The Ministry based its targets on the findings of the 10th power survey committee that power consumption in 1983-84 would be around 1,500 crore units where as the planning commission estimated a demand of 1,420 crore units. In addition, the Energy Ministry took into account the power loss due to seepage.

RBI working group recommendations

Till very recently only the resourceful farmers were able to energise their pumpsets as no finance was available to those who were not able to invest from their own resource. The Reserve Bank of India having been aware of this issue had constituted the working group headed by Shri B Venkatappiah, Chairman, Rural Electrification Corporation to go into the various aspects of this problems especially providing finance and mobilisation of resources The RBI has accepted the recommendations of this working group on planned participation of commercial banks in the rural electrification schemes.

The RBI has advised the banks that advances made under the project would be treated as priority and ARDC would refinance the loan issued by banks to the extent of 50 per cent Two types of projects have been identified by the group depending on the existing electrical infrastructure in a particular area. The first to be completed in two years would be offered an eight year loan with a maximum of Rs. 30 lakh and with a moratorium for a period of upto two years for the repayment of the principal. The second to be of two to four years duration would be given a 14 year term loan, with a maximum loan amount of Rs. 50 lakh.

TABLE

Annual estimate of energy required in irrigation pumping in India

	Energy consumption-million kilowatt/hour)						
Type	1968-69	1973-74	1978-79	1983-84	1988-89	1993-94	1998-99
(i) Human & animal power	2746.6	2365.9	2178.1	1937.1	1642.9	1294	893.2
(ii) Diesel engines . .	1004.5	1813.2	2905.2	3264.5	2627.5	3099.5	3620.9
(iii) Electric motors . .	1543.9	4241.9	6778.4	7573.4	10234.2	12153.5	14207.9
Total	5295.03	8421 0	12861.7	12775.1	14504.6	14547.4	18722.0

The sixth plan working group had first suggested a target of 30 lakh pumpsets to be energised over the five year period. Subsequently, with the interim report submitted by the group constituted by the RBI and discussion wih the Planning Commission, the recommendations regarding scheme of joint financing by the commercial banks, ARDC, REC have been endorsed. However, the size of the programme has been scaled down to 20 lakh pumpsets to be energised throughout various programmes : seven lakh by REC, seven lakh by State Plan Programme with joint financing and, six lakh by commercial banks, ARDC and REC.

While this ambitious programme casts responsibility on the commercial banks to make finance available to a large number of farmers for energising their pumpsets, the implementation of this programme will be quite meaningful and desired objectives would be achieved if a sound infrastructure is right now created to solve the day-to-day progiammes of these farmers. The experience of the commercial banks and the observations/studies of the agricultural universities and various research/management institutions are helpful as they have direct bearing on the efficiency and productivity of these pumpsets.

Selection and Maintenance of Pumpsets

The farmers going in for lift irrigation plants for their farms hardly take into consideration the vital factors that help in deciding the size and other parameters of the entire system of their wells and farms. They usually follow the examples of their successful neighbours and are guided to get similar types of lift irrigation equipments. In many cases their selection is incorrect as the parameters of 'discharge' and 'head' in their cases is different from that of the others. Even after wrong selection of pumps, prime movers, pipes etc, the farmers do not take adequate care in proper installation and maintenance of their pumpsets. In view of the cases the farmers who operate their pumpsets satisfactorily do not know that they can still improve the performance of their pumpsets through proper measures

A study of pumpsets installed by the farmers of Kheda, Gandhinagar and Ahmedabad districts in Gujarat conducted by the ICM revealed that about 70 per cent of the pumpsets were inefficient in operation A study of wastage of energy in pumpsets installed by the farmers in Ludhiana district conducted by the oil and water engineering division of Punjab Agriculture University (PAU) during 1974-75 revealed that the overall efficiency of the pumpsets varied between 23 and 27 per cent as compared to the expected overall efficiency of 50 per cent. It was estimated that the farmers of Punjab were annually wasting about 12 crore litres of diesel in operating 2 77 lakh dieselised pumpsets for want of advisory services to the farmers Similar studies in U P. and Haryana also indicated that the farmers with dieselised pumpsets were using excess qantities of diesel due to low overall efficiency of their pumpsets This indicates the fact that these farmers will also have to waste money and power in running their electrical pumpsets after they are replaced or new connection are granted under this programme.

Consultancy Services

The farmers do not have adequate knowledge of selecting the right size and type of electric motor or diesel engine and pumpsets. They also do not pay attention to proper selection of pipes, pipe fittings

foot-valve, power-transmission etc. Due to such meagre knowledge, negligence and wastage the overall efficiency of the pumpset goes down or is not realised and leads to higher consumption of fuel per unit of water lifted. This necessarily increases the cost of lift irrigation as also cost of crop production. Simultaneously, the nation also suffers on account of the drain of foreign exchange needed for import of crude oil or petroleum products and loss of avaiable electric power. Hence all the measures which could increase the overall efficiency of the pumpsets will be advantageous to the farmers and the nation. It has been observed by the experts that if necessary measures are taken for selection of proper size of electric-motor diesel engines and pumps, pipes etc., the farmers in Gujarat alone would be saving electricity, diesel and lubricants worth Rs. 6 to 8 crore a year. Increasing overall efficiency of the pumpsets, therefore, by result-oriented measures will be helpful in reducing the cost of lift irrigation. This focusses the urgency and importance of the need for extension advisory services. On account of huge potentials for cost minimisation in lift irrigation it is essential that effective measures for advising the farmers on (a) proper selection of pumps, pipes, prime movers etc., (b) replacement of inefficiency components of existing pumpsets and (c) adequate care and maintenance of the pumpsets, should be planned and implemented with a view to helping the farmers reduce the cost of production of farm crops The advisory and repair services could very well be offered by the skilled job workers in the rural areas itself if the proposed District Industries Centres' Scheme also include setting up a small sized workshop. This will prevent farmers going to big towns for repairs, waste valuable on-season time and spend more money thereon.

The production of electric motors has to be tailored to suit the requirements of irrigation. Fitting pumps to match the fields and pumping head of wells deserves much greater attention. This will call for a quality control in pump production and the availability of a wide range of pumps to meet the varying needs. There is need to introduce pumps with a higher efficiency to suit the conditions of high discharge and low to medium pumping heads.

Irrigation wells are costly structures which should be used at the optimum level. Available information indicates that irrigation wells in general are under-utilised at present. The average annual utilisation of wells ranges from 1200 to 2500 hours. Low intensity of cropping, lack of co-operation among farmers to share water from a common well and the non-availability of electric power for diesel fuel and repair facilities are the other principal cases of the under-utilisation of wells. All these problems underline the urgency of a massive programme on all aspects of water and power use It is only in this way that yield and income per units of water and power can be increased

However, more important is not the provision of finance alone but the completion of physical targets The total outlay in the Fifth Plan for rural electrification when it was finalised in 1976, was fixed at Rs 685 30 crore with a target of 81,000 additional villages electrified and 13 lakh pumpsets energised. While the actual expenditure exceeds the approved outlay in all the first three years of the plan, the number of pumpsets actually energised fall far short of the target The number of pumpsets energised during the plan at the end of 1977 stood at 7,77,881. The Planning Commission now hopefully expects to energise 20 lakh pumpsets during the sixth plan period.

Steady Power Supply

It is essential to minimise the loss of energy in operating the pumpsets This can be achieved by strengthening the transmission and distribution net work of electric power The improvements should aim at continuity of supply reduction in losses in transmission and prevention of frequent voltage fluctuations. It is commendable that REC is trying to improve power factor, rectification through installation of capacitors to reduce time losses and conserve electricity. It is gratifying that RBI is evolving a relatively modest programme for this year involving a total outlay of Rs 60 crore to be shared equally by the three participating agencies and will modify the same in the light of experience gained.

Indian Ranks Fourth in Rubber Output

The average yield of natural rubber in India has gone up a little over 800 kilograms per hectare

India now ranks fourth after Malaysia, Indonesia and Thailand in world rubber production.

According to the Rubber Board, production had gone up to 147,000 tonnes during 1977-78 from a mere 15,394 tonnes during 1978-79 due to adverse climate conditions and strike by plantation workers for about a fortnight during the peak production season of November and December, 1978.

Consumption of natural rubber went up to 164,500 tonnes during 1978-79 from 145,000 tonnes in 1977-78 a recorded increase of 19,500 tonnes (13.5 per cent)

CET, UNESCO and UNDP

Peter Dye
UNESCO/UNDP E.T. Advser, CET.

From the very beginning, the planners of the introduction of Educational Technology to India saw it needing support from the UNESCO. For its part, the UNESCO and UNDP recognised this as just such a project as the United Nations should support, and is able to support.

The first complete Project Document was signed by the Government of India, UNDP and UNESCO, in 1974. This document set out in some detail the aid that was considered necessary in order to set up a Centre for Educational Technology, which would be capable of going "far beyond the usual elaboration of teaching aids or the classical use of broadcasting facilities. It wants to be an entirely new approach to educational problems which could be decisive for India........." This quote is from the Document itself.

The aid planned was grouped into three main categories—fellowships, equipment and advisers.

The fellowships involved overseas courses for members of the CET and for personnel from various States who work in Educational Technology. Individual fellows went to the USA and UK, while a group of eight fellows spent two months in Australia, where a special course on Correspondence Education was run for them by the University of New England in Armidale.

The equipment supplied is that which is not available in India, and which was needed to give the CET the ability to use any techniques in tackling the educational problems that would be presented to it. This included still photographic cameras, a fully-equipped dark-room, 16mm film-making equipment, including an animation camera and stand, and a multi-track sound recording system. All the equipment for the Television Recording Van, except for one video monitor, was purchased through the UNESCO, as well as the 'static' television production facilities such as the film and slide projection systems, the video-disc recorder for slides, and the 'instant graphics' system, which allows limited animation to be added to the television picture by means of an electronic pen.

The UNESCO is well aware that the provision of such equipment is only the first stage in the production of a tangible end-result. At appropriate times in the commissioning of this equipment, advisers with many years of experience in particular techniques or systems have been attached to the Project to pass on their knowledge, and to ensure that there are CET staff members fully able to carry on with the maintenance and use of the equipment. Such advisers were experts in the fields of graphics, educational television production, film techniques, self-instructional materials, Correspondence Education, small gauge video production, and film animation As well as helping their Indian counterparts at the CET, these advisers have conducted training courses at many places in India other than Delhi.

Such are the bare bones of the UNESCO and UNDP involvement with the CET, and if I have made it sound as though these organisations tend to stand some what aloof, and inject their contributions into the CET rather like a computerised programme, then I have certainly given the wrong impression There are many U.N. people deeply involved with the CET and its functioning, and they are well aware of the high professionalism of the CET'S officers All of the inputs mentioned above were the results of joint planning by Indian Government officers, with advice from U.N. personnel where it was needed. As the plans materialised, the UNESCO advisers have worked as part of the CET team, and have felt privileged to do so. At the same time the UNDP staff have supplied the logistical back-up, and kept the accounts and monitored the activities of the project against the aims and objectives as were laid down in the Project Document.

Earlier in this article the phrase "tangible end-result" was mentioned in relation to this project

Such an end-result could be regarded as the setting-up of the CET as a viable institution with the capability of undertaking research into innovative methods of learning.

This has, indeed, been achieved, but is only a step towards the end-result that we all have in mind and that is to see education in real terms brought to those people to whom it has previously been denied, for whatever reasons.

A lot of work has been done at the CET, during these formative years, on the evolution of systems to bring this about, and much work has also been carried out in the various States.

The UNESCO and UNDP have already indicated that they would be interested to continue their association and involvement with the Centre and Educational Technology as it enters the new phase. □

Mass Media and Education

Jag Mohan

Consultant, CET

DURING the last 30 years, as many seminars and symposia have been held at which there have been live discussions about harnessing the mass media like radio, short films, television, etc. for educating children and adults.

The media men have obviously been protagonists of increasing use of the mass media in schools and colleges as well as in centres of non-formal education and continuing education. Their strong points are that in developing countries with large areas of darkness and equally large percentages of illiterate population, it is absolutely necessary for using the mass media in making life more meaningful to the masses.

Among the educationists, there is a section that is still suspicious of the new-fangled idea of education as well as the gadgetry and gimmickery of the mass media, especially the hardware part of it. Their contention is that poor developing countries cannot afford to waste a lot of money in educational technology.

In between these two groups is the third group, which half-heartedly accepts the mass media and concedes about their utility in the present-day context of population explosion. But in the actual use a certain amount of mechanical ritualism creeps in, with the result, the purpose is defeated.

To understand the full scope of the mass media in education, the historical perspective is warranted. A flashback to the days of the Second World War is necessary. The Allied Forces were arraigned against the fascist forces in a death struggle. From out of the barbarities and cruelties perpetrated by both sides, a few good things emerged One of them was scientific research Though for the limited purpose of killing and instruction it got great fillip for development. A peak point was reached in the atomic holocaust at Hiroshima and Nagasaki. Another good was the discovery of the full potentialities of the mass media.

It must be recalled that by the beginning of the 'forties, the BBC had already become a well establish-ed institution. The Documentary Movement started by Dr John Grierson had explored the potentialities of the short film. And, television was just flexing its muscles as it were.

Those above 50 in age may recall how during the War, the voice of the renegade Lord Haw-haw from Berlin struck terror in the hearts of Britons. As counter-propaganda, BBC put out effective broadcasts. The war effort films produced by some of the best film-makers on both sides of the Atlantic matched in qua-

lity with those put out by the Soviet Union. Besides films were intensively used for training the personnel of the three forces especially in handling the latest equipments.

Incidentally, as an offshoot of Britain's war effort through the radio and films, India too acquired the expertise of using the mass media. Broadcasts for recruitment and increased food production in various languages were forced on the people even though the nationalist struggle was at its height after the 1942 Quit India movement was launched. The Information Films of India, the predecessor of the Films Division, was also a product of the war effort.

In the post-war period, when the process of decolonization started and the vast empires of the Western powers began to be liquidated, the mass media acquired new significance. The erstwhile colonial possessions were faced with gigantic tasks of national reconstruction. And along with agriculture industry and defence, education was given high priority.

Educationists as well as educational administrators found in the mass media potential instruments that could rapidly transform the hitherto stagnant situation. India has been the foremost in developing the Third World to utilise the radio, the short film and television for the education of the young and the old, for those within the confines of schools and colleges and for those in the fields and industrial establishments.

The All India Radio has been broadcasting special programmes for school children and for farmers. The spoken word came to be increasingly used for motivating men and women in family welfare programmes, in educating the masses about voting procedures, in popularising decimal coinage and the metric system. The Films Division made a whole lot of developmental films on these subjects and they were shown not only in the regular theatres the Field Publicity Directorate has also been taking these films to remote villages and border areas. To such villages where there were no electric conection mobile generators were carried.

When television was started in India, it was made mandatory that education should be one of the cornerstones of the programme policy. Today, the Doordarshan devotes a certain percentage, to educational telecasts, both formal and non-formal.

Thanks to the vision of Late Dr. Vikram Sarabhai, who was as much involved in India's Space Programmes as Dr. Homi Bhabha was involved in t "Atoms for Peace" Programme. India was the fi country to use satellite communications for education purposes. The satellite Instructional Television Experiment, conducted by the Indian Space Research Organsation, the All India Radio and the National Aeronaut and Space Administration of USA, was launched as on of the biggest projects in education of children an their teachers.

The mass media are being used increasingly by the Central Government. The Ministry of Education through its National Council of Educational Research and Training has been using films and other audio visual aids over the years. The Central Film Library of the Department of Teaching Aids has over 7,00(films—documentaries, educational films, instructional films, motivational films, etc. These films are in continous circulation among schools and colleges. Concerted efforts have been made by the Centre for Educational Technology in harnessing the mass media for education

The States, big and small, have their own audio-visual departments with on-going programmes of production and distribution of films, film-strips, tapes, etc The State Educational Technology cells are also popularising the use of the mass media for education

The total picture of the mass media in the service of education in India may not be something to crow about. At the same time, it is very reassuring that the mass media have come to stay in the field of education. It must be clarified here that when the word, "education," is used it is meant in its widest sense In India, it has to be so in the context of various programmes like the Universalization of Primary Education (also known as the Comprehensive Access to Primary Education), Adult Education, Continuing Education, Correspondence Education, etc.

An interesting aspect of all these programmes is that the mass media are being used intensively and extensively—and what is more with discrimination The evaluation of these programmes is being constantly done and the feed-back is used to further improve and refine the programmes.

It may not be out of place here to mention the valiant efforts made by the Extension Department of the Ministry of Agriculture in the utilization of films, radio and

television, as also the print media, to educate the farmers all over the country. Over the years, the Extension Department has been sponsoring the production of agricultural films.

These are simple instructional films on the cultivation of cash and other crops, the proper use of insecticides, sheep-rearing, poultry-keeping, agro-industries and so on. These films have been screened in villages and hamlets with 16 mm and 8 mm projectors. If the Green Revolution has succeeded, if our food production has increased manifold, if our buffer-stocks are reassuring and if our silos are full then part of the credit should go to these films, mostly produced by the Agrifap Unit of the Films Division, based in Delhi Incidentally, several of these have won international awards and they are much in demand among the developing countries. This is a case point about the impact of the mass media on the much proclaimed illiterate (but intelligent) farmers.

From what has been set out so far, it can be concluded that there is no question of the use or the non-use of mass media in education. They are being used and in the years to come they will be increasingly used in all manner possible. In other words, the mass media have come to stay in the field of education.

But what is required is the proper mix of the media. The educational administrators and educationists have to posses an over-all understanding if the potentialities and limitations of each every one of the media. Accordingly, the formula must be worked out as to which medium should be used for a specific purpose and in what manner.

More than that, the present trend, popularised by the CET is that of using the "package programme". In the package programme all the media can be used and should be used but in a most advantageous manner. The system approach has to be adopted in determining the package programme. A certain amount of field testing is to be done before the launching of the actual programme so that there will be scope for changes and corrections. It is in this particular area that the Portapak and the Video Tape Recorder, the Super 8 film and 8 mm projector, the ordinary tape-recorder and such other modern aids are extremely useful. The feed-back secured through them can determine the final content of whatever is to be screened, broadcast or telecast.

As we are on the verge of entering the decade of the 'eighties, it behoves on us to resolve the controversies, to become firm in our determination and to achieve breakthrough in diverse fields of education through the intelligent use of the mass media.□

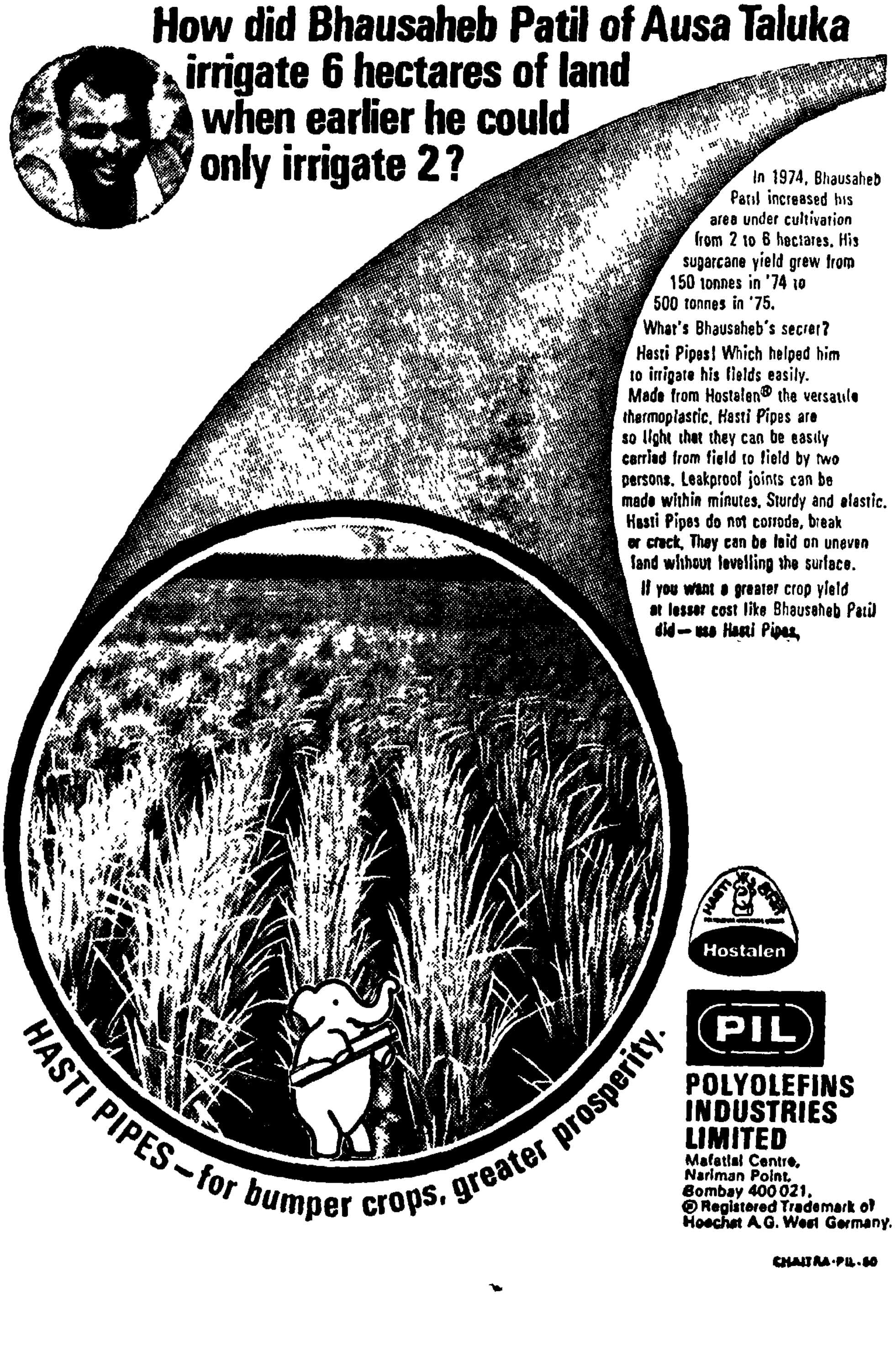
Education and New International Economic order

(Contd. from page 9)

ties among the nations. The communist countries do not even consider it a proposition worth considering. The public opinion in the developed capitalist democracies is increasingly becoming hostile to such transfer of resources. On the other hand, there can be no solution to removing present inequalities and creating a new international order without a massive transfer to resources, no matter what other strategies of development are adopted. The only solution is that the UN should impose a tax on a graduated basis on all those countries whose per capita income is above a certain level and this money should be distributed towards meeting the basic needs of the poor nations for education and other minimum needs.

It is quite clear that there can be no real new international economic order unless the developed countries accept zero growth rate except that part which is the result of increasing productivity through technical progress; the economic monopoly of the developed countries is broken; massive transfer of resources is made in the form of grants; the developed countries by upgrading their production through new technological development leave a large number of manufacturing areas to the developing countries and allow a free flow at least of the educated persons across borders.

The other side of this new international economic order cannot be forgotton. It is the responsibility of the developing countries to democratise their internal system if they want to democratise the international system; reduce the gap between their own elite and the masses; develop a system by means of which modern technology can be adopted to appropriate levels and evolve a system of cooperation among themselves by reducing their inter-state conflicts □


How did Bhausaheb Patil of Ausa Taluka irrigate 6 hectares of land when earlier he could only irrigate 2?
In 1974, Bhausaheb Patil increased his area under cultivation from 2 to 6 hectares. His sugarcane yield grew from 150 tonnes in '74 to 500 tonnes in '75.
What's Bhausaheb's secret?
Hasti Pipes! Which helped him to irrigate his fields easily. Made from Hostalen® the versatile thermoplastic, Hasti Pipes are so light that they can be easily carried from field to field by two persons. Leakproof joints can be made within minutes. Sturdy and elastic. Hasti Pipes do not corrode, break or crack. They can be laid on uneven land without levelling the surface.
If you want a greater crop yield at lesser cost like Bhausaheb Patil did—use Hasti Pipes.
HASTI PIPES—for bumper crops, greater prosperity.
Hostalen
PIL
POLYOLEFINS INDUSTRIES LIMITED
Mafatlal Centre,
Nariman Point,
Bombay 400 021.
® Registered Trademark of Hoechst A.G. West Germany.

Family Welfare Gains Increased Popularity

Family Welfare movement has gained momentum, with a marked increase in the adoption of all methods except vasectomy, which is still short by 20,000 from the four lakh acceptor level of 1974-75.

Against 1.35 million sterilisation acceptors in 1974-75, 1.45 mill.on were motivated in 1978-79. Compared with 5.4 lakh tubectomies earlier, 1 07 million have been done now.

Intra-uterine device (IUD) accepted by 3.7 lakh women has now been betterd with 5.4 lakh. The users of conventional latex sheath contraceptives and oral pills have increased from 2.52 million to 3 36 million.

The percentage of couples effectively protected increased from 15.1 million in 1974-75 to 22.7 million, which is close to the peak emergency years achievement of 23 9 million in 1976-77.

Illiterate women—mainly rural women with one or two children—are increasingly making use of facilities for medical termination of pregnancy.

In 1978-79, there were more than 2,77,165 cases of (MTP). In the previous year, 2,41,724, women accepted (MTP), In the previous year, 2,41,724 women accepted MTP, while the emergency years peak was 2,78,870, in 1976-77 quite close to last year's performance.

The proportion of intra-uterine device (IUD) acceptance by couples with three or fewer children has increased from 51.2 per cent in 1970-71 to 78.9 in 1977-78.

The number of vasectomy acceptors increased from 38.5 per cent to 66.8 per cent, while the percentage of tubectomy acceptors increased from 27.9 to 55 2.

There has been a marked increase in the proportion of young couples accepting permanent family planning methods or spacing of children. The average age of wives of vasectomy acceptors declined from 32.7 years in 1973-74 to 31 2 years in 1977-78. The average age of women accepting tubectomy declined from 31 4 years to 30 2 years The mean age of IUD acceptors dropped from 29 2 years to 28.2 years.

The percentage of couples accepting family planning with wives below 30 years of age, has increased. In 1973-74 about 33.4 per cent of men accepting vassectomy had wives below 30 years of age, while in 1977-78 about 41 7 per cent of the wives were below 30.

In 1973-74, about 37 6 per cent of the wives below 30 accepted tubectomy. In 1977-78, about 51 per cent of the acceptors were women below 30. For the same years, the number of IUD acceptors below 30 mounted from 51.6 per cent to 65 4 per cent.

For the first quarter of this year, sterilisation acceptors increased by 81 per cent from 350,455 in the first quarter of 1978 to 634,627. There were 1,447,336 sterilisations, in 1978-79, compared with 928,543 in the previous year. This marks an increase of 52.6 per cent.

IUD insertions during the first quarter of this year were 227,531, as against 134,372 in the corresponding period of last year—an increase of 69.3 per cent.

There were 537,644 IUD acceptors during 1978-79-an increase of 64 7 per cent over 326,526 acceptances by women during the previous year.

Conventional sheath contraceptives and oral pills were accepted by 3,361,790 in 1978-79, compared with 3,235,281 in 1977-78 an increase of nearly 4 per cent. □

"Not a cures"

WHO say, he is the accursed? "Oh! it is a dreadful disease. A leper is an untouchable". But Upendra Pandit disproved this as mere fad.

Till recently Upendra Pandit a resident of Parasandi village in Kharagpur Distt. was full of frustration and despair. He could not eke out a living and maintain his family, as he was a leper. Yet, he did not keep quiet.

Eight years ago, he got himself admitted into the Leprosarium at Kapasiya. In about five years he was cured. This heralded a new era in his life. The Kanvakel branch of Punjab National Bank stepped in to rehabilitate Pandit Upendra. Under Lepre Rehabilitation Scheme, the bank financed him to the extent of Rs. 1,500 to open a general store.

Upendra Pandit is now the proud owner of this shop near Kanvakel leprosy centre. Apart from sustaining his family, he is regularly paying the loan instalments.

The strong desire to live enabled Pandit to weather the storms in his life

Govinda Sharma ***FPO Gaya***

Rubber in Nontraditional area

Shri P.K. Bandyopadhyay

IT was in the sixties that vigorous steps were initiated in the country to raise rubber plantation in the nontraditional areas. The traditional rubber tract of Kerala, Tamil Nadu and Karnataka with a limited scope for expansion was not considered enough in view of the pressing demand. For successful cultivation of rubber, a special kind of agro-climatic condition is required. A warm humid climate with a temperature between 21° and 35° centigrade and a fairly distributed annual rainfall of not less than 200 cm. are the optimum. However, the tree may grow quite well under slightly varying conditions also. The geo-chimatic conditions of the northern Mizoram are conductive to rubber plants.

So the Soil Conservation Department of Assam Govt. took up rubber plantation in 1960-61 with about 0.8 hectares at Bilkhawthlir and Vairengte. Since then, the plantation has been extended to other area like Lushai Cherra and Buidum. So far 151 hectares of land has come under rubber plantation. The trees planted in the initial years were all seedling trees. Now budded stumps are preferred for higher yield of latex. In June 1977, 2,200 budded trees were brought from Tripura, another non-traditional rubber growing area, and introduced at Bilkhawthlir and adjoining places.

The seedlings are raised in the nursery which are laid with overhead shade. The planting distances vary according to the type of planting materials. Spacings for seedling stumps and budded stumps are 23x23 cms and 30x30 cms respectively. The seedlings thus raised are transplanted after prunning the stem at a height of 45 cms to 60 cms from the collar. Cover crops like Puneraria Phaseoloides and Mimosa Pudica are grown in the plantation area to improve the soil structure. The entire process of mulching, weeding and manuring is also gone through.

The plants normally take 7 to 9 years to attain the stage of tapability. Tapping is a process of controlled wounding' by cutting open the latex vessels with a special knife called Jebong or Gouge or Michie golledge. The latex collected in the cup are poured in to the trays. Then acetic acid or formic acid is mixed with the liquid for coagulation. The coagulam is pressed in a machine to remove moisture and air bubbles. Thereafter, it is brought to the smoke house to dry on the reapers. The sheets then become ready for use. So far, 4,000 rubber sheets have been made out at Bilkhawthlir. □

BOOKS BOOKS BOOKS

The Dialectics of Forward and Backward Community

Social Movements and Social Transformation
Dr M S. A. Rao, Macmillan Co., Delhi 1979, *pages* *i*X-292, *Price Rs.* 70.

The field of sociology of social movements is admittedly rather new in India. This study by popular Professor of Sociology, Delhi University compares and contrasts two backward class movements viz., Shri Naryana Dharma Paripalana Movement of Shri Narayana Guru Swamy of Kerala and the All-India Yadava Movement operating in the Haryana—Delhi—Punjab region Seemingly a doubtful venture, the seriousness manifest in the treatment belies this impression and grip the attention of the critical reader.

Both the Izhavas and Yadavas have had several characteristics as communities in common. The weakest element in both is ethnicity. The purport of this work is to show that it is not by sheer imitation process (as was made out by one school of thought) that they have lifted themelves up to be transformative forces to be reckoned within the All-India spectrum but that their effort involved a relentless process of protest and conflict and literally the wresting of the power from the forward classes in matters of religious, educational and political import. These are matters replete with incidents in the social history of the regions, whereof there are more tangible evidences in Kerala than in the Yadava region that got stimulated only after the British shifted their capital to New Delhi during the early decades of this country

The author proceeds to define the social movements of the Izhavas and Yadavas on the basis of three elements viz, collective mobilization, the presence of an ideology and an orientation towards change. For those who are not familiar with sociology theory and reasoning in the context of the sociology of development, the statement of the conceptual framework of the study is essential to follow the treatment. Both Izhavas and Yadavas were formerly treated as depressed classes and their oppressors in terms of their own phenomenology were the upper non-Brahmin castes. Both have succeeded in bringing about a stupendous social transformation in their areas of habitation These have their explicit political manifestation today It cannot also be overlooked that socio-logical studies of this type might have a negative impact on the minds of the educated youth of one time backward classes displaying a historical sense of anger against their socalled oppressors of the byegone past and resisting fusions on the social plane.

A perusal of two chapters on SNDP movement in Kerala shows that the author has been very painstaking in his coverage of the source material in equal measure as he has scoured over the available literature on the Yadavas. The demand for a Yadav Regiment in the Indian Armed Forces on the same lines as the Jat and Rajput Regiments etc., made by the *All-India Yadava Mahasabha* in a Memorandum in November, 1968 is given in Appendix alongwith the resolutions of the Backward Classes Federation Conference, 12th March, 1966 The bibliography is one of the best that the present reviewer has come across although it studiously avoids certain titles that could upset the author's own viewpoints from other fields of sociology.

A persual of Chapter Six on 'Backward Class Movements · Comparisons and Analysis' would be rewarding to those who desire to delve deeper into the history of social movements including the elites of these two communities Appearing at it does at a time when multi-faceted dimensions of backwardness of communities are receiving a good deal of confused attention the book should assist in supplying an underpinning of logical sociological analysis and also in clarifying thoughts of those who are searching for universal criteria under Indian conditions. And to this extent, it must be admitted that the author has indeed, made a significant contribution and deserves high praise. If only the author would attempt a study of the covert social movements of other communities in the upper self-styled crust which dispensed with protest and conflict and yet reaped all possible advantages effortlessly, it will be a valuable sequel.

B. N. Nair

Thus Spake the Raja

Selected Works of Raja Ram Mohun Roy; *Publications Division, Ministry of Information and Broadcasting, New Delhi. Price Rs.* 15.

BY Virtue of functioning as a peculiar media unit aiming at national publicity through the written word, Publications Division has to its credit remarkably concise and precise volumes on the life and personality of quite a number of national stalwarts and dignitaries of proven eminence, who played a vital role in building up India we see to day. The serius is known as 'Builders of Modern India'. Closely on its wheels, 'Collected Works of Mahatma Gandhi', a long-term venture, has been a momentous project of real national significance. There can be no denying the fact that the finality of the volumes will, in due course, prove to be a monumental treasure-trove of knowledge for posterity at home and abroad.

Similarly, "Classics of Indian Politics", the very caption of the series, by itself, presenting a unique picture of an expression, has the attributes of a commendable smaller scale series. Consequently, as one in the line of the series, 'Selected Works of Raja Rammohun Roy', enshrined in polished dust-cover, is a simple paperback of impressive print and get-up, as much intrinsic-in-substance to read, as attractive to look at.

In India, through ages, thought and theory have often gripped individual talent, electrifying their moral fibre, before assuming proportions of a social and political force affecting the mainstream of national life.

National publicity, at Government level, in the fields of culture, education, social uplift and international relations, especially at the current phases of development, has much to do with and bank upon the glories of the hoary past and cultural heritage, verging over to social traditions and concerned struggles against historic odds like alien rule, etc.

Fortunately, it is in this context, that the need has been felt to make available to the present generation, the written works of social and political luminaries like Raja Rammohun Roy whose versatile genius gave us original thought on various problems along with a functional outlook towards practical solutions. His appraisal of the various problems of women, *inter alia*, burning of widows and women's right to property and the steps taken towards that issue had made mu headway even in his life-time. Sati was legally abol ed and today we have the necessary legislation safeguard the right to property.

Apart from the interest-oriented and substanti readability of the entire book, the selective discreti exercised by the compilers and editors deserves ap preciation in as much as it has successfully touche upon all available material, covering the entire range o diverse activities of the 'Raja', depending upon hi lucid and thoughtful essays and the best of his speech es and letters.

The book which amounts to a trimmed-up documentation of Raja Rammohun Roy's brilliant writings in English does present, in no ordinary way, an adequate affluence from his erudition and scholarship in other languages like Bengali, Persian and Arabic

R. Prakash

Agriculture

Modernisation of Indian Farming *by Theodor Bergmann. Popular Prakashan Private Ltd. Bombay Pages* 18 ; *Price Rs.* 40.

WHETHER India should go in for mechanisation of agricultural operations and if so, to what extent has been the subject of debate in the last few decades. It has been pointed out in the Draft Five Year Plan 1978-83 that unrestricted mechanisation of agricultural operations will not be in the interest of the country as it will severely worsen the rural unemployment problem. It has, therefore, been proposed that a policy of selective mechanisation should be adopted. It has further been suggested in the Plan that a detailed study of the employment and productivity effects of tractorisation should be undertaken in view of the controversy on the subject.

In this context, the present book will serve a very useful purpose. Theodor Gergmann has made a deep study of this problem. Referring to the fact that mechanised farming has developed foremost in the industrialised regions of the world viz., Northern and Western Europe, U.S.A., Canada, Australia and New Zealand, the author has observed that modern techniques entered agriculture after a high industrial level had been attained. The book describes the general

conditions in Indian agriculture, and the mechanical-technical progress and its material difficulties. The consequences and implications of technical change in developed countries have been dealt with in some detail. The social, economic and technical problems of mechanisation have been discussed. The book analyses the micro-economic, macro-economic, social and other effects of the first phase of technological change. Some model calculations about tractor demand are made and discussed. The author has also discussed the inter-relationship between the social structure of the farming community and its prevailing production techniques.

The agricultural sector has to play a vital role in the process of economic growth. Its production has to be progressively increased to feed a growing population and to provide raw materials for various industries. The use of mechanised equipment can help to increase agricultural production quickly. The tractor is not only a new source of energy but also a catalyst of change in the agrarian and social structure. On the other hand, the tractor is not suitable for the traditional structure of agricultural holdings in India. Moreover, there is the danger that a rapid mechanisation of farming will lead to displacement of human labour and result in wide-spread unemployment. The author, however, feels that mechanisation should be seen as part of the general transformation from an agrarian to an industrial society. In that context, it will not, in the long run, increase the already existing unemployment and underemployment in rural areas. On the contrary, economic progress and capital formation in the farming sector will be accelerated. New industries and services, which assist to modernise agriculture and to increase its yields, offer at the same time employment for those who are to leave this sector. Intensified production, reclamation of waste land, double cropping and animal husbandry will improve the employment of those who remain in farming towards more regular work over the whole year.

In the present stage of India's agricultural development, the book meets a real need and is a significant addition to the literature on farm mechanisation. The author has made a commendable effort to present an account of the present stage of development of agriculture, the need for the mechanisation of agricultural operations and the problems that this may give rise to. The book should be of interest to agricultural economists and scientists as well as to others who have to deal with the problems of agricultural development.

S. N. Khanna

Agricultural Finance

Agricultural Finance in Nepal: An analytical study *by Kumar Kant Jha; published by B. R. Chawla, Heritage Publishers, M-116, Connaught Circus, New Delhi-110001 : Price Rs. 50. Pages 241.*

AGRICULTURAL finance is a source of major headache for an under-developed economy like Nepal. In this context the book aims at a detailed study of both demand and supply of agricultural credit and rural indebtedness in the Eastern Terai region of Nepal. Through the institution of private money lending countless farmers have been dragged down to a burden of recuring debt. But without a proper alternative, this institution becomes indispensable to rural society. The book has made a very analytical study of the causes and degree of rural indebtedness and also the sources of supply of agricultural credit. The book has also discussed the causes of failure of different debt legislations, the cooperative movement and the compulsory saving Scheme of Nepal

The last chapter of the book has thrown light on some policy implications emerging from the study. It is here that the book has not been able to make its mark. Broad measures like improved credit, marketing, agricultural extension measures etc. have been undertaken by the policy- making authority of an under-developed country and there seems to be nothing novel about them. It is easy to criticize the existing institutions on the basis of their set-up and performance but it is rather difficult to suggest proper alternatives. It is here where the skill lies. The book has really not been able to provide a practicable answer to the breaking of the vicious circle of rural indebtedness.

Neela Sen Gupta

Gold Policy

Aspects of Gold Policy by S. L. N. Simha. Institute for Financial Management and Research Madras (Februarv 1979) Pages 159 ; *Price Rs.* 30.

THE present publication is a collection of papers and the summary proceedings of a Seminar organised in January, 1979 in Bombay jointly by the Institute for Financial Management and Research (IFMR) Madras and Economic Research and Traing Foundation of the Indian Merchant Chambers Bombay. The eight background papers though devoted to the examination of different aspects of Gold Policy, present an indepth analysis of the whole range of issue bearing on the gold problem and the policy in both the domestic and international settings. This publication successfully brings at one place not only a lively, objective, and thought provoking discussion on the Gold Problem but also contains a wealth factual information and data on the subject.

The first background paper "Gold in Retrospect and Policy Options" by Miss D. Hemalatha presents a brief history of the gold problem, covering both international and national aspects right till its latest date line and examines various options before the Government in deciding upon a gold policy. Two of the background papers included in the present collection namely "Gold and the International Monetary System" and "Gold Subscriptions for IMF Quotas" are reproductions of earlier works by the editor but their inclusion in the present collection, if anything, contributes to the wholesome treatment of the subject and helps in placing the discussion on issues of domestic gold policy against a broader canvas. In the concluding section of this publication, the Editor Shri Simha, Director of the IFMR has outlined his views on what should consitute the main ingredients of a Rational Gold Policy

A few distinguished Economists like Prof. Vakil and Dr. P. R. Brahmananda and the spokesman of the Bombay Bullion Association have suggested, though for different reasons, that Government should arrange for a regular and substantial supply of gold to the Indian public both from the stocks held by it or though imports. One of the main planks of the Rational Gold Policy initiated by the Editor in the concluding section is the imposition of ceiling on holding of gold by individuals in all forms which is to be enforced with reasonable efficiency. The other important interesting features of the scheme are re-cylcing of gold to meet certain genuine needs, restriction of lending against gold, limited imports of gold for dor sales, institutions of savings schemes which coul conveniently substituted for gold holdings. He co des by an interesting observation that gold pro cannot be solved by Economists and Statisticiai it is politicl rather than economic in character.

One may or may not agree with the views expi in the Seminar For example : should the Govern follow an active gold policy when gold is not an e tial commodity of mass consumption and its weig the cost of living index is nil ? Should our pre foreign exchange reserves be deployed to import for satisfying the demand of the people to hold for several reasons ? Will this not run counter tc accepted policy of weaning away people from g Will it be administratively feasible to impose a ce on the holding of gold by individuals in a vast cou These are some of the important aspects which ma carefully considered while evolving an approp Gold Policy in our country. Nonetheless for all t interested in studying the gold problem—academi and policy makers alike—this publication shoul highly interesting and thought provoking. For the quality of analysis and facts and the view p brought together it undoubtedly makes a highly able contribution to the literature o nthe subject.

D. R. G

Financial Management

An Analytical And Conceptual Approach, S Kuchhal, *Chaitanya Publishing House, Allahabad, (Sixth Edition). Pages xvi* 664, *Price Rs* 45.

(Sixth Edition) pp. xvi 664, Price Rs. 45/

THE need for providing training facilities financing techniques specially in the I World has arisen during recent years in important way. In advanced communities operati sophistications occurred to meet the needs of inc ing complexities of the commercialisation proces expanding production possibilities. To make optimal use of available capital resources, the inge of business executives evolved certain practices w were found highly satisfying. Over a number of y they get streamlined, systematised, and they even ly became a major constituent of the science of l ness administration. In case the systematised k ledge available with regard to technical, fina managerial and economic affairs are intelligently sented, the developing countries could usefully a them to their own requirements. If the rece guidelines are indicated to the business executives economic administrators they will not find such a c plex subject of financial management very esot

and they might even apply them successfully to meet the special challenges confronting them Professor S C Kuchhal has done a yeoman's job in providing valuable aid in this regard He has succeeded in providing a good text book for post-graduate students preparing for financial management. The book has gone into six editions during the course of a decade which is a glowing testimony to its usefulness

Importance of the subject in India has arisen due to abundance of manpower while capital is scarce a characteristic common with many other developing countries Introduction of appropriate technology has been advocated in this context but technological problems cannot be divorced from their financial and managerial implications The 10 sections of the book dealing with such problems as tools of financial analysis, break-even analysis, financial forecasting, short and long-term managerial problems and evaluation of certain approaches to financial allocations provide the necessary knowledge on the basis of which an intelligent business executive could make his decisions effectively The establishment of an industrial undertaking requires comprehensive assessment of its long-term rate of return, prime and supplementary costs, the conditions prevailing in capital market and the channels through which working capital could be mobilised over a number of years A lay student may not even know the sources from which necessary preliminary information could be obtained But the book under review does not only indicate the sources, it also provides the necessary wherewithals with which to study the fluctuations of industrial profitability and work out the capital costs of the firm and internal rates of return An industrial unit is needed not only to generate greater employment opportunities but also for optimalisation of available financial resources, the industrialists in private and public sectors have to decide the scales of their operations which should be attained in order to enable them some gain by their efforts The problems relating to scales of operations in their relationship with the break-even point are often overlooked in deciding the significance of small scale and cottage industries in India These programmes are generally considered as welfare schemes for which cost considerations are not considered important It is for this reason that the non economists also dabble about these sectors of the economy The low rates of profits accruing in public sector enterprises in India despite their having installed highly sophisticated capital equipment are considered the result of deficient managerial skill In case the techniques discussed in the present publication could be properly applied to these sectors of the Indian economy better industrial efficiency and satisfactory return to capital investment could be expected The cost volume-profit analysis commonly known as the analysis of the break-even point is not given due importance in the Indian context Professor Kuchhal has provided the necessary technical tool, on the basis of which these problems could be satisfactorily analysed for which purpose he has even given illustrative case studies, but whether the presentation has been attractive enough to non-academic readers is a debatable point The book is so much loaded with material required for answering university question papers that its appeal to general readers has been greatly sacrificed A good index at the end of the book could have overcome some of its shortcomings

—Bepin Behari

Books Received :-

1 India's Security in Resurgent Asia
by Ajit Singh Sarhadi
Heritage Publishers
Connaught Circus, New Delhi

2 Materials Management
by Vasant Ambade
Harshad Prakashan
Shivajinagar, Pune.

3 Libraries in Delhi
by S K Bhatia
D K Publishers
1, Ansari Road, New Delhi

4 The Origin of Brahmi Script
Editors S P Gupta and K S Ramachandran
D K Publications
Nangia Park, Shakti Nagar Delhi-7.

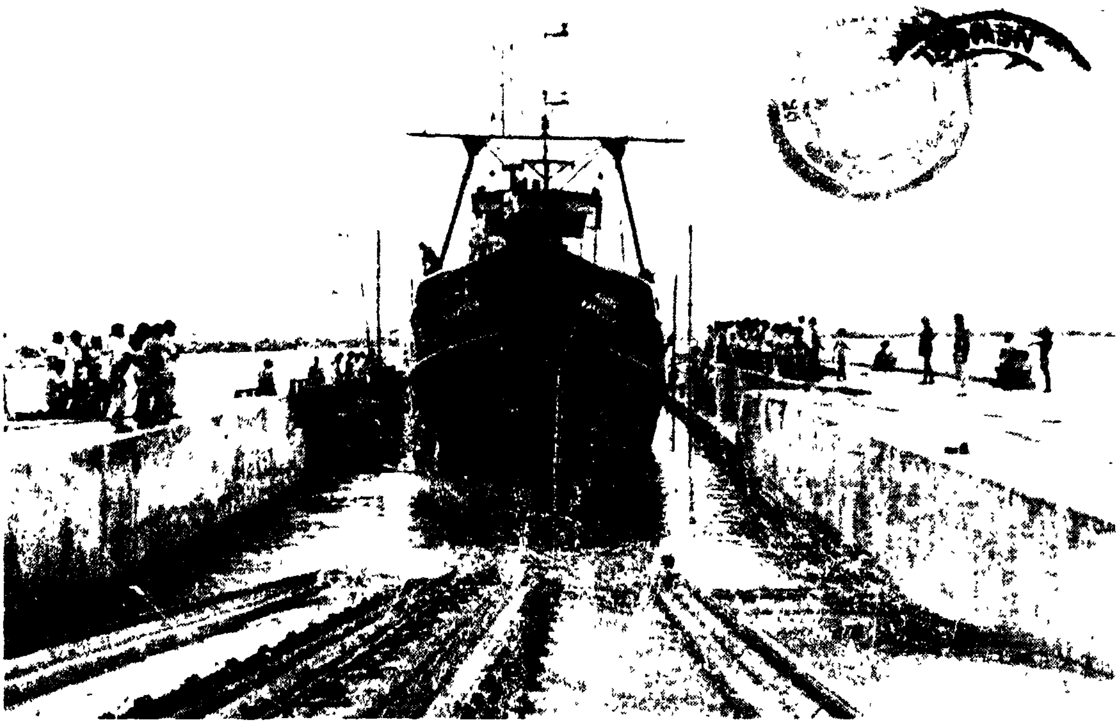
5 Centres of Islamic Learning in India
by Ziya-ud-Din A Desai,
Publications Division,
Min of I & B, New Delhi.

6 Studies in Demography
by S C Srivastava
S V Nath and Jai Prakash Nath & Co
Meerut (UP)

7 Indo-German Partnership in Development
People to People
Annual Report 1978 Published by
Indo-German Social Service Society,
New Delhi

8 The Two-Sector General Theory Model
by Santi K Chakrabarti
The Macmillan Co of India Ltd
Madras

Slipway of Vizag Fishing Harbour



SLIPWAY of Visakhapatnam Fishing Harbour the first of its kind on the east coast, was commissioned in June, 1979 when the 120 ton fishing trawler 'Kakateeya' was hauled up for repairs.

This slipway, which has facilities to repair big trawlers, is considered as a very important input in the furthering of the marine products export from India.

Visakhapatnam Fishing Harbour (Stage-I), constructed at the cost of Rs. 4.2 crore, was commissioned in April, 1978 and is accommodating 15 big trawlers and 150 mechanised boats. To fulfil the repair needs of the fishing vessels, this total slip-way facility was entirely planned by the engineers of Visakhapatnam Port and was built indigenously at a cost of Rs. 95

The method of construction with a coffer dam with clay-core and de-watering to a depth of (—) 7 mtrs is the first of its kind in India. This complex has main slip-way, six repair tracks for accommodating six trawlers at a time, four cradles to move the fishing vessels on to/away from slip-way, winches, workshop and other amenities.

The complex can haul-up trawlers upto 300 ton weight and with a length of 30 mtrs. and draft of mtrs.

The first vessel to make use of the facility was the Andhra Pradesh Fisheries Corporation's trawler 'Kakateeya' which was successfully docked, repaired and floated back on 29the June, 1979.

Printed by the Manager Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001

yojana

80 P



NDUSTRIAL DEVELOPME
AND
BACKWARD ARE

Words That Inspire

Indian economic Independence means to me the economic uplift of every individual, male and female, by his or her own conscious effort. Under that system all men and women will have enough clothing not the mere loin cloth, but what we understand by the term necessary articles of clothing—and enough food including milk and butter which are today denied to millions....

* * *

Real socialism has been handed down to us by our ancestors who taught: "All land belongs to Gopal, where then is the boundary line? Man is the maker of that line and he can, therefore, unmake it." Gopal literally means the State, that is the people. That the land today does not belong to the people is too true. But the fault is not in the teaching. It is in us who have not lived up to it...

* * *

Let there be no mistake about my conception of Swaraj. It is complete independence of alien control and complete economic independence. So at one end you have political independence, at the other the economic..

* * *

The idea behind the village industries scheme is that we should look to the villages for the supply of our daily needs and that, when we find that some needs are not so supplied, we should see whether with a little trouble and organisation they cannot be profitably supplied by the villagers.

* * *

India is made of villages, but our intelligentsia has neglected them. Village life must be not become a copy or appendage of city life. The cities have to adopt the pattern of village life and subsist for the villages. Today, the cities dominate and drain the villages so that they are crumbling to ruin. My Khadi mentality tells me that cities must subserve villages.

* * *

We should be ashamed of resting or having a square meal so long as there is one able-bodied man or woman without work or food.

* * *

We won't find the remedy for human ills by losing patience and by rejecting everything that is old because it is old. Our ancestors also dreamed perhaps vaguely, the same dreams that fire us with zeal.

I have always been loath to hide or connive at the weak points of the community or to press for its rights without having purged it of its blemishes.

–Mahatma Gandhi

YOJANA

Volume XXIII Number 18
1 October 1979
9 Asvina 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office · Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address: Yojana,** New Delhi **Telephones:** 383655, 387910, 385481 (extensions 373, 402 and 420) Circulation: Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs.30 Three Years—Rs.42. Foreign Subscription: One year £ 2.70 or $ 5.00. Two Years—£ 4 50 or $9 0 Three Years—£ 6.30 or $ 12.50. Single Copy £0.12 or $ 0.25.

Editorial

A Candid Document

AT THIS point of time when there is an understandable anxiety about the final shape of the Sixth Five Year Plan the release of the Annual Plan (1979-80) by the Planning Commission will remove many of the misgivings in public mind. It will keep the records straight. There can be no goodbye to Planning nor is there any Plan holiday. Within the frame-work of the draft Sixth Plan (1978-83), the Annual Plans continue to be restructured towards the attainment of the national goals of employment creation and poverty alleviation. In the preparation of the current plan (1979-80) extra efforts were made to include projections of saving and investment in both the private and public sectors, estimated growth rates by sub-sector and output targets for almost all commodities and services in relation to specific targets to be achieved during the Sixth Plan period as indicated in the Draft

No one will dispute the fact that the Five Year Plan (1978-83) has got off to a good start The vexed problem of allocation of resources between the Centre and States has now been resolved partly by the Seventh Finance Commission and partly by the National Development Council Regarding the estimates of additional employment the projected estimates in respect of eight broad sectors show increase in employment of the order of 5.10 million in 1978-79 and 6.06 million in 1979-80. This implies that the employment opportunities outrun the net additions to the labour force during this period.

It is easy to brush aside the rosy prospects visualised by the planners in the light of the indications currently available. But they were aware of the emerging imbalances in the economy as also of the inflationary pressures. In view of the sharp upward movement in the index of wholesale prices since March 1979 the annual plan document called for slowing down the rate of monetary expenditure, acceleration of imports of scarce commodities and increase of the off-take from the public distribution system through suitable measures. It pleaded for caution and made clear that both the short term objective of price stability and the long term investment plan would be in jeopardy if sectional claims in current consumption demands for higher wages by workers and higher prices for surplus farm produce pushed the economy to a level which it could not bear. The recent set-backs in production in the key sectors and widespread draught could not be visualised. But the imponderables went into plan calculations when the document underlined the need for timely removal of power and transport bottle-necks, improvement of industrial relations, improved performance in the key sectors and normal rainfall. If the short-term projections have gone awry, corrective measures will have to be taken immediately to restore the health of the economy.

Industrial Development and Backward areas.

D. T. Lakdawala

Deputy Chairman, Planning Commission

THE important role of industrialisation in development has always been recognised in our planning strategy. Differences have related not so much to the importance of industrialisation per se, but to the types of industries that should be promoted, the modalities of development, the location of projects, etc. The Draft Plan 1978-83, though it pays special attention to rural development in comparison with the past trends, lays great emphasis on development of industries which are estimated to grow at 7 per cent compared with an overall average growth rate of 4.7 per cent per annum. Within the industrial sector, however, there is some restructuring of outlays to emphasise village and small industries and industries related to agriculture, but the overall increase in the Public Sector outlay in the industry, minerals and energy sector is 78 per cent, which compares well with the 76 per cent increase in total outlays.

Role of States

State Governments and their agencies play an important role in achieving the industrial targets set in the plan—both in the public and private sectors. Because of the national market to which the major industries cater and the types of policy decisions that they need regarding location, technology, imports, collaboration, etc., the Central Government alone can, through the system of industrial licensing, approve of a proposal to set them up or expand them. It is possible that propositions, which seem attractive to an individual State, may not be acceptable from the national point, and hence, are rejected. Such decisions furnish a cause for complaint. But it must be recognised that the States have to work within the national interests as articulated in the national plan and the licensing policy. Even when a licence is granted for the establishment of an industrial unit, there are some dangers that must be guarded against. Issu of a licence is not a guarantee of the feasibility o viability of a project, nor does it automaticall imply the availability of necessary finance Many big projects like those of petro-chemi cals, fertilizers etc. require finances on a sca which even better-off States cannot easily pro vide, and in many cases, the overrun problems be come intractable. There is a fashion-cycle in choosin projects, which does not take into account of the fa that while one or two projects in a particular lir may have good scope, the overall market may be lim ted. Government agencies are not always in a positio to realize quick profits that a private entreprenei may obtain by entering the market with a temporai shortage. Therefore, official agencies should thin twice before entering into a field only on short ter considerations.

Financial Operations of SIDC/SIFC

About one-third of the State Industrial Developme Corporations/State Industrial Financial Corporatio lending goes to the public sector and joint sector unit Since many of these will be fairly large in scale, the involvement is bound to be fairly limited. In fact, give the limited resources at their disposal, participation large ventures may not be as useful as the stimulatio of medium scale private enterprises. Even more th finance, the limited human resources available wi SIDC may be more usefully deployed in promoting substantial number of medium scale ventures than a few large projects. A large sphere of SIDC activiti pertains to medium industries, most of which, und the new dispensation, require no licence at all. Th importance has been greatly enhanced in the ne strategy. This naturally increases the responsibilities the Chief Executives who will have to say "No" most as they can finance only a small part even investment in non-large industries, and have no auth rity to whom the blame can be passed for doing so. Tl first crucial test is of course commercial viability. In

Based on the inaugural address at the first Conference of the Chief Executive of the State Industrial Development Corporations.

way, it may be the harbinger of the wider changes that may follow one day.

The magnitude of financial operations of SIDCs is quite small compared to the total industrial investment. Two-thirds of their assistance accrues to the private sector, but the figures for 1976-77 indicate that the assistance disbursed by them amounted to only 1 7 per cent of the level of investment in the registered private sector manufacturing. The corresponding figures for the all-India financial institutions appear to be around 18 per cent. Thus, it cannot be argued that SIDCs are a key factor in supplementing the resources available for industrial investment in the private sector Their real role is in the directional changes that the Chief Executive can stimulate in the pattern of industrial development. There are three basic aspects to this : firstly, the industry mix in the lending programmes ; secondly, the pattern of location and ; thirdly, the pattern of ownership.

One finds a significant difference between the all-India institutions and the SIDCs in the figures of industry-wise distribution of assistance for 1977-78: the share of 'food and textiles' is lower in the SIDCs and the share of sectors like 'basic metals' and 'engineering' is higher. This lower share of relatively labour-intensive sectors like 'food and textiles' seems to be even more pronounced in 1976-77, and hence, may not be an aberration. To some extent this may be due to the fact that much of the financing for sugar and textiles (particularly in the cooperative sector) is undertaken by the IFCI. Nevertheless, the SIDC may well examine their lending policies to see whether unwittingly they are placing undue emphasis on relatively capital intensive new industries at the expense of agro-based labour intensive activities. In fact, there is a special need for SIDCs to take interest in this field since many projects in this sector may be relatively small and amenable to funding by state level institutions. Supporting medium scale industries using local materials or catering to local markets, may be a more useful activity than participation in large projects along with the all-India institutions and large houses.

The SIDCs can also play a major role in influencing the location of industries. SIDC assistance upto 58 per cent went to projects in the specified backward districts in 1977-78. The corresponding figure for the all-India institutions is 47 per cent. Thus, it appears that SIDCs have been more successful in channelling investment into backward areas. But it must be remembered that when we look at absolute figures as opposed to percentages, the all-India institutions channelled into backward areas an amount that is 10 times greater than the SIDC's.

At present, there are a large number of schemes for promoting industries in backward areas. There is the Central Government investment subsidy scheme, then the scheme of concessional finance from all-India institutions, and some fiscal incentives and a variety of concessions offered by State Governments. There is a great demand for extension of the subsidy scheme to other areas. However, the effectiveness of these schemes in promoting the development of backward areas needs to be studied more carefully.

To begin with, there are some doubts about the extent to which industrialisation of backward areas benefits local people or leads to further development in ancillary industries or tertiary activities. Over the past two-and-a-half decades, we have set up large industrial enterprises in many backward areas. However, the impact of these projects seems to be localised in relatively small pockets and there is little evidence to suggest that they have helped to stimulate any substantial improvement in the living standards or growth prospects for the district or state in which they are situated At the same time, there are areas which have experienced industrial growth without the benefit of any major public sector industrial project. Perhaps, the answer lies in the appropriateness of industries that have been established in the backward areas in relation to their circumstances and environment.

A point often mentioned about schemes of backward area development is that they seem to benefit mainly the backward regions of developed states. The States of Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, Gujarat, Maharashtra, Punjab, Haryana and West Bengal are regarded as industrially better developed as they accounted for 72.7 per cent of factory employment in 1975-76, though their share in the total population was only 51.2 per cent. The backward districts of these States accounted for 68 per cent of the disbursement of Central investment subsidy between 1972-73 and 1977-78 and 68.5 per cent of IDBI's project assistance sanctioned to backward areas in the period 1970-71 to 1977-78. Incidentally, the State Industrial Development Corporation of these States accounted for 82.6 per cent of the cumulative total of SIDC lending. Thus, there is an apprehension that the schemes for promoting industrial development in backward areas may accentuate inter-state disparities, even though they may help to secure a better spread of industries within the more developed states. So emphasis should be on taking more efficient and effective steps for the development of backward areas in less developed States rather than halting the good measures taken in the more developed States.

There are many other questions regarding these schemes that need to be answered. What should be the coverage of these schemes ? At present, the Central investment subsidy scheme covers a little

over one hundred districts, and the scheme of concessional finance, nearly 250 districts. We need to consider whether incentives for industries are the answers to the development problem in all of these districts. Moreover, the scheme does not distinguish between districts in terms of degrees of backwardness, and the more developed of the backward districts may gain at the expense of others. Some doubts have also been expressed about the basis for the incentives. Both the Central investment subsidy and the scheme of concessional finance are essentially subsidies to capital and hence, would tend to favour capital intensive options. If local impact is to be maximised, it may be rather more important to worry about the degree of labour intensity and the extent to which the skills and inputs required can be made available locally or outputs made useful to the area. This may require a reconsideration of the basis for the incentives.

There are two more problems. The States often vie with another in giving concessions to attract industries. From the national viewpoint these concessions which have only the effect of diverting industry from backward areas of one State to those of another without acting as an overall stimulant to the growth of backward areas as a whole are in the nature of a wasteful competition, which should better be avoided. Secondly, there is a tendency to view these incentives as permanent. This amounts of an admission of defeat. Presumably, at some level of industrialisation an area should be able to "take-off" and develop without concessions and subsidies. If the incentives are truly successful in stimulating industrialisation, they should, in due course, become unnecessary. No area should need well-conceived subsidies for ever. If it does, it throws grave doubt about the choice of development strategy for the area. One reason why many backward districts have not yet reached a take-off stage may be the diffusion of subsidies over a wide area with the consequent difficulty of creation of other facilities. It may be more useful to concentrate on a few areas or 'growth centres' at any given time, build these up quickly so that they reach a stage at which further incentives are not necessary, and then to switch on to other areas or growth centres. This sort of concentration is necessary not so much in the coverage of various incentive schemes but in the direction of promotional effort put in by SIDCs and in the development of infrastructure. Bulk of SIDCs' purpose-wise distribution of assistance has gone for new projects which is as it should be. However, a very substantial portion of SIDC assistance is by way of supplementary assistance to meet cost overruns and other problems. This fact is disturbing and needs to be studied further. Are the procedures for scrutiny in SIDCs less reliable than in the all-India institutions ? Is it the case that the less viable projects rejected by others end up with the SIDCs ? Al the search for creation of new entrepreneurs is n vigorous enough as the seed money provision is i fully utilised.

Owing to its historical backward and socio-econ mic reasons, development of industrial entreprene ship in India has been very restricted both in extent and quality. It is largely confined to a f regions and communities. It has not taken enthusias cally to modern scientific management. It is domina by the extended family concept and is averse to thr ing open its ranks to technicians and profession purely on merit. With new opportunities and un stress or competition, it is transforming itself but a very slow pace and with all the travails of trial error. With the greater participation in industri sation of institutions like SIDC, there is a legitim expectation that this will change fast. Industry, future, especially large and medium, must not o look to those immediate problems but those ahe take effective steps to tackle them and equip then selves to make their products of high functio quality available to the people at cheap price thro product and process innovation and adaptat Industrialists will also have to take a wider vision their social responsibilities especially to their si and rural industry customers and ancillaries

Promotion Plan

On balance, the SIDCs in some States have m notable gains by way of industrial growth and ind rial dispersal. The real task before us is to ensure these results are also achieved in states which I so far been lagging behind. What is required nev that all SIDC's should evaluate their activities past few years in terms of the impact on income employment. They need to draw up an industrial motion plan that identifies viable medium scale vities in each area or growth centre. This ider cation must be consistent with targets and program in the national and State Plans. The actual imple tation of this promotion plan will require coordin with the agencies providing infrastructure, other dit agencies (like banks) and other promotional ganisations like the District Industries Centre SIDC's have now come of age and must start f tioning vigorously within the framework of the ning process.

There is a considerable gap in the thinking industrialists and of the Government and the so In a democratic society this is, to some extent, nat This represents the difference in views of a group which is apt to think in term of its needs motivations, and of the political leadership w must attach much greater weightage to the intere the poor. But it is necessary for the success of n economy that workable compromises should be

Unused Inventories In Central Government Agro-Based Enterprises

Dr. R Prakash
Jt Director, Planning Commission

THE agro-based Central Government enterprises have grown in size and number during the last twelve years. In 1966-67 there was only one enterprise (National Seeds Corporation Limited) with employed capital of Rs 1 7 crore and turnover of Rs. 1.97 crore. In 1977-78 there were four enterprises with total capital employed at Rs 12.79 crore and turnover of Rs 23 33 crore The former increased by 754 per cent and the latter by 14 times. State Farms Corporation of India Limited which was set up for administration of the Central State Farms on commercial lines, is the biggest undertaking of the group (employed capital of—Rs 6 7 crore) and is running 14 farms in different States. Banana and Fruit Development Corporation Limited was set up in 1964 and on 31st March, 1978 had Rs 5 lakh capital employed. Andaman and Nicobar Islands Forests and Plantation Development Corporation Limited was incorporated on 21st January, 1977 It had Rs. 81 lakh capital employed on 31st March, 1978 and turnover of Rs. 45 lakh in 1977-78 These four enterprises incurred a loss of Rs. 1 9 crore in 1977-78.

Level of Inventories

The inventories of this group of enterprises (excluding Andaman and Nicobar Islands Forests and Plantation Development Corporation Limited for its being in the first year of inception) increased from Rs. 67 lakh in 1966-67 to Rs. 11 87 crore in 1976-77. The cost of of sales over the period increased from Rs. 1.78 crore to 26 66 crore. The inventories as a percentage of cost of sales increased from 37.6 (1976-77). The date on inventories, cost of sales and turnover to 44 5(1976-77). The date on inventories, cost of sales and turnover rates for the period under study have been shown in Table I and their graphical presentation is in Exhibit. (Page 9) It will be seen that the inventories turnover ratio during the peroid show two distinct phases of movements. In the first five years the stock turnnover ratio had fallen gradually from 2 66 (1976-67) to .77 (1970-71). In the last six years thas improved from 77 to 2 26 The highest recorded turnover ratio of the period is 2 66 in the initial year This ratio was not achieved again. The next lowest was 2.49 of 1967-68 Thus by comparing the figures of two tall ends no improvement is seen in holding of inventories. In the first two years of the period the aggregate inventories were equal to 4 51 and 4 82 months of cost of sales and in the last two years these were at 5.96 and 5 34 months It may be seen from Exhibit I that in the first three years of the period the sales curve is above the average inventories bars and in the next two years the cost sale curve cuts the inventories bars. Thereafter gap between cost of sales curve and average inventories bars goes on widentng which is a healthy feature.

Inventory Components

The data on inventories of raw materials and spares, work-in-process and finished goods ; and on cost of sales and consumption of materials have been summarised in Table II (Page 11). The three components of inventory in relation to their consumption or sales have been graphically shown in Exhibits II. III and IV.

Raw Materials

The ratio of consumption of crude materials and spares and their average inventories, show erratic movements in the period under study. In 1966-67, it was 2.92 and in the following year it rose to 3.7. Thereafter in the next three years it was lower than the turns ratio of initial year. During the last six years it grew sharply with slight fall in 1973-74 to reach the highest record figure of 6.24 in 1975-76. The stock

14 DPD/79—2

TABLE—I

Year	Rs. in crores		%age of Inventories to Cost of Sales	No. of months Inventories in terms of Cost of Sales	Stock Turnover Ratio 2 : 3
	Cost of Sales	Value of Avarage Inventories			
1966-67	1 78	0.67	37 6	4.51	2.66
1967-68	3.01	1.21	40.2	4 82	2.49
1968-69	2.58	2.08	80.6	9.68	1.24
1969-70	3.72	3.68	98.9	11.88	1.01
1970-71	3.67	4.79	130.5	15.58	0.77
1971-72	6.16	4.39	71.3	8.57	1.40
1972-73	7.38	4.25	57.6	6.90	1.74
1973-74	8.04	4.71	58.6	7.02	1.71
1974-75	8.64	5.34	61.8	7.41	1.62
1975-76	16.43	8.17	49.7	5.96	2.01
1976-77	26.66	11.87	44.5	5.34	2 25

holding of crude materials was lowest at 1 9 months of consumption in 1976-77 and was highest at 6 2 months in 1969-70 The changes in the inventories of raw materials and spares against their consumption over the period has been shown in Exhibit II

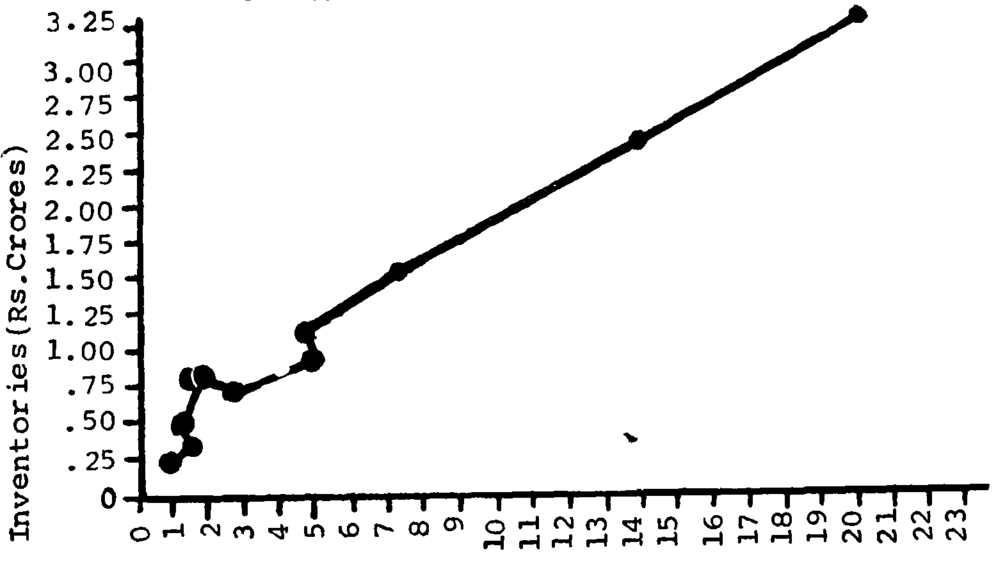
The Exhibit III shows the manner in which WIP had changed in relation to cost of sales over the period. The inventory turnover ratio of WIP was on the whole quite high due to special nature of work of agro-based enterprises having little scope of inventories in process. During the period as a whole this group of enterprises held stocks of work-in-process varying between 6 to 9 days of cost of sales which does not seem to be excessive and as such it does not call for any deeper analysis.

Finished Goods

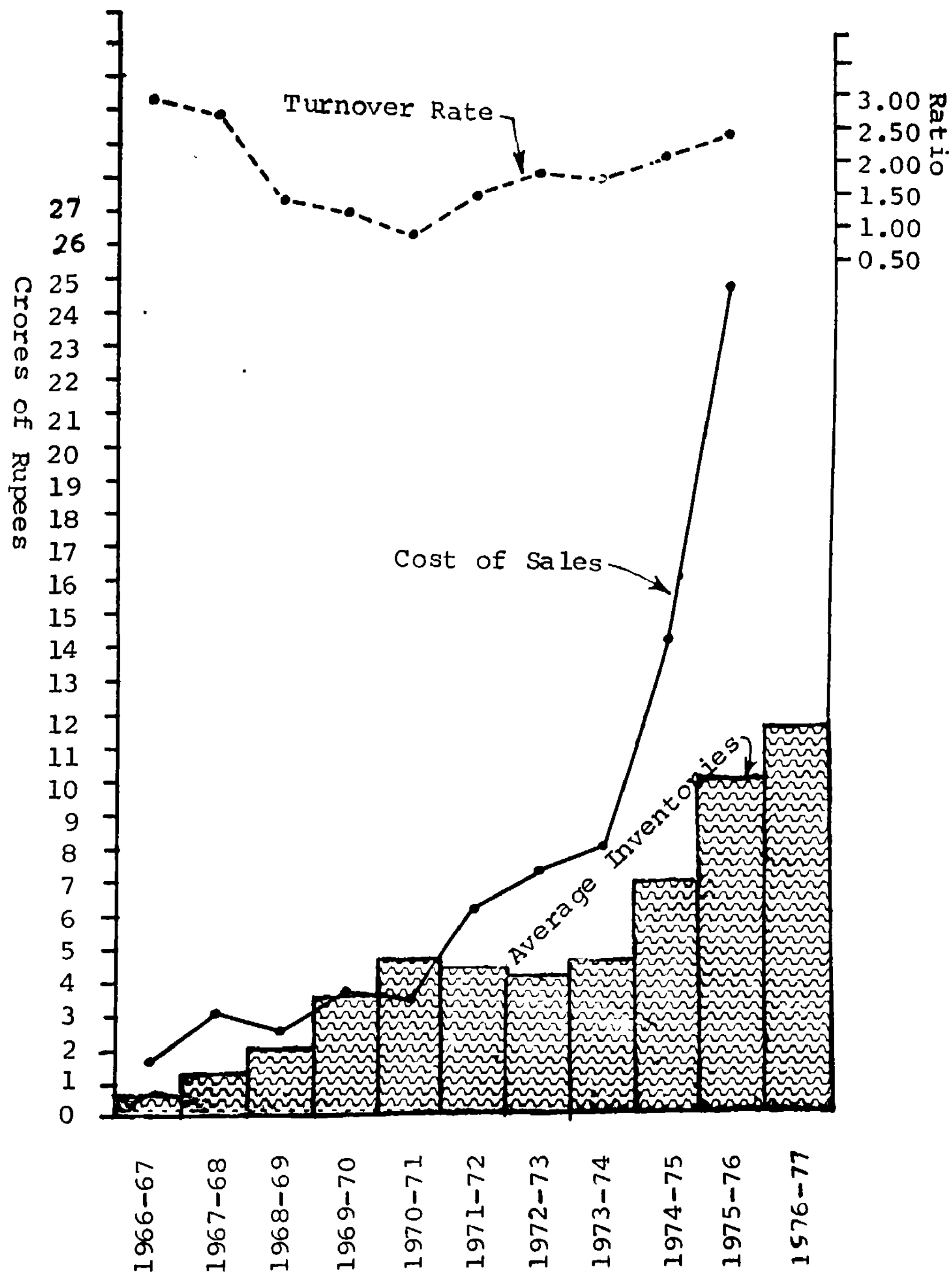
The finished stocks have followed the general pattern of aggregate inventories. In the first five years the inventories turnover ratio sharply fell from 4.24 in 1966-67 to the lowest level of the period at 0.93 in 1970-71. In the last six years it started improving and reached 3.3 in 1976-77. The highest turns ratio

EXHIBIT - II

INVENTORIES OF RAW MATERIALS & SPARES , & THEIR CONSUMPTION RELATIONSHIP - AGRO-BASED ENTERPRISES



INVENTORY CHARTWATCH - AGRO-BASED PRODUCTS

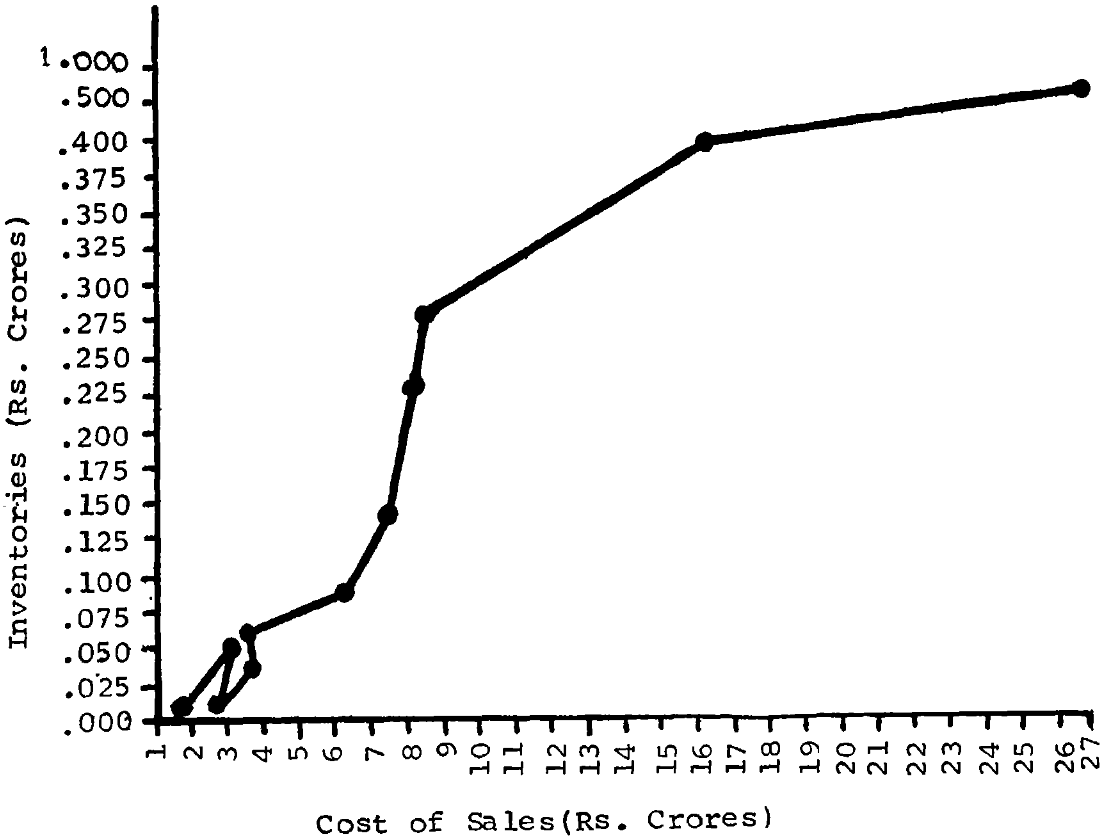


of later part of the period viz. 3.3 was much less than those of initial two years i.e. 4.24 and 3.62. The changes in the inventories with movements in cost of sales over the period are shown in Exhibit IV.

Experience has given some idea of approximate limits, within which, inventories vis-a-vis the derived demand/usage would move. This approximate limit suggests three possibilities. First inventories may

EXHIBIT - III

INVENTORIES OF WORK-IN-PROCESS & COST OF SALES RELATIONSHIP - AGRO-BASED ENTERPRISES



move in constant ratio with their usage. Second according to established belief with increasing consumption or sales relatively lesser volume of inventories are needed and under deal conditions of effectuate management, inventories should move in square root relationship with their usage. Third alternative is that inventories increase in between the two extremes. These trends can be captured through application of the following three models to time seriss data :

i) $I = a + bs$

ii) $I = a + bs^{\frac{1}{2}}$

iii) $= < S\beta$ Where $\frac{1}{2} < \beta < 1.0$

Here I stands for inventories, a—safety stocks, b/ < policy variable and S for sales/usage. The value of the exponent β will indicate the degree of economies of scale in the holding of inventories. A general form equation—$I = a + bS\beta$ could give better idea about the extent of economies of scale, but unfortunately there are statistical difficulties in establishing by linear regressions an equation of the general form and as such this model cannot be appied. The application of three models will give in sight in the inventory behaviour, and assess the extent to which there had been economies of scale in inventory holding. In model (i) inventories form a constant ratio with usage. In (ii) stocks are in square-root relationship to derived demand. The model (iii) holds the assumption that economies of scale exist, but are not as great as those indicated by the square root relationship.

Application of Models

Model I : The stocks of raw materials and spares, and of finished goods were correlated respectively with the materials consumption and cost of sales in a number of groups of years according to linear model I = a+bS through regression analysis. The important results have been summarised in Table III.

The intercept 'a' is +ve in case of materials and spares and is significantly different from zero for the period as a whole and also for 8 years (excluding years of

TABLE—II

Year	Cost of sales	Value of materials & spares consumed	Average inventories of			Turnover Rate		
			Raw materials & spares	Work-in-process	Finished Goods	Materials & spares to its consumption 3÷4	Work-in-process to cost of sales 2÷5	Finished goods to cost of sales 2÷6
	Rs. in crores							
1966-67 . . .	1.78	0.73	4.1	0.03	2.8	2.92	445	4.24
1967-68 .	3.01	1.22	0.33 (3.2)	05 (0.2)	0.83 (3.3)	3.70	60.2	3.62
1968-69 . . .	2.58	1.09	0.50 (5.5)	0.003 (0.01)	1.58 (7.3)	2.18	860	1.63
1969-70 . .	3.72	1.59	0.82 (6.2)	03 (0.1)	2.83 (9.1)	1.94	124	1.31
1970-71 . .	3.67	1.57	0.78 (6.0)	.06 (0.2)	3.95 (12.9)	2.01	61.17	0.93
1971-72 . .	6.16	2.57	0.73 (3.4)	0.09 (0.2)	3.57 (7.0)	3.52	68.44	1.72
1972-73 . .	7.38	4.82	0.94 (2.3)	0.14 (0.2)	3.17 (5.2)	5.12	52.71	2.33
1973-74 .	8.04	4.78	1.16 (2.9)	0.21 (0.3)	3.34 (5.0)	4.12	38.28	2.41
1974-75 . . .	8.64	7.40	1.46 (2.4)	0.27 (0.4)	3.61 (5.0)	5.07	32.00	2.39
1975-76 . . .	16.43	14.08	2.37 (2.0)	0.39 (0.3)	5.41 (3.9)	5.94	42.13	3.04
1976-77 . . .	26.66	20.23	3.24 (1.9)	0.56 (0.3)	8.07 (3.6)	6.24	47.61	3.30

Figures in brackets relate to inventories in terms of months of consumption of materials and spares for crude materials and of cost of sales for WIP and finished goods.

TABLE—III

Regression of Inventories to Usage : I— a+bS

Analysis for Parametars	1967-68 & 1969-70 to 1975-76		1966-67 to 1976-77	
	Materials & spares	Finished goods	Materials & spares	Finished goods
1	2	3	4	5
No. of observations	8	8	11	11
a—coefficient	0.49	1.77	0.36	1.24
standard error .	08	.51	0.06	0.41
t—value	6.15	3.46	5.82	3.05
b—coefficient . . .	0.1069	.2193	0.1434	0.2639
standard error	.0088	.0449	.0076	0.0380
t—value	12.091	4.879	18.75	6.91
R^2	.961	.799	0.975	.842
F—variance ratio	146.21	23.81	351.73	47.80

extreme fluctuations). This shows the marginal ratio of inventory and usage is less than the average ratio of inventory and usage. R^2 is more than 96. The coefficient 'b' is also +ve and is significantly different from zero. These facts give evidence of economies of scale in the period as a whole. But similar analysis of regression results in 1 to 7 and 1 to 8 years show very low value of R^2 being 542 and .699 indicating a poor fit and as such no conclusion can be drawn for that period about economices of scale. For finish-

EXHIBIT - IV

INVENTORIES OF FINISHED GOODS & COST OF SALES RELATIONSHIP - AGRO-BASED ENTERPRISES

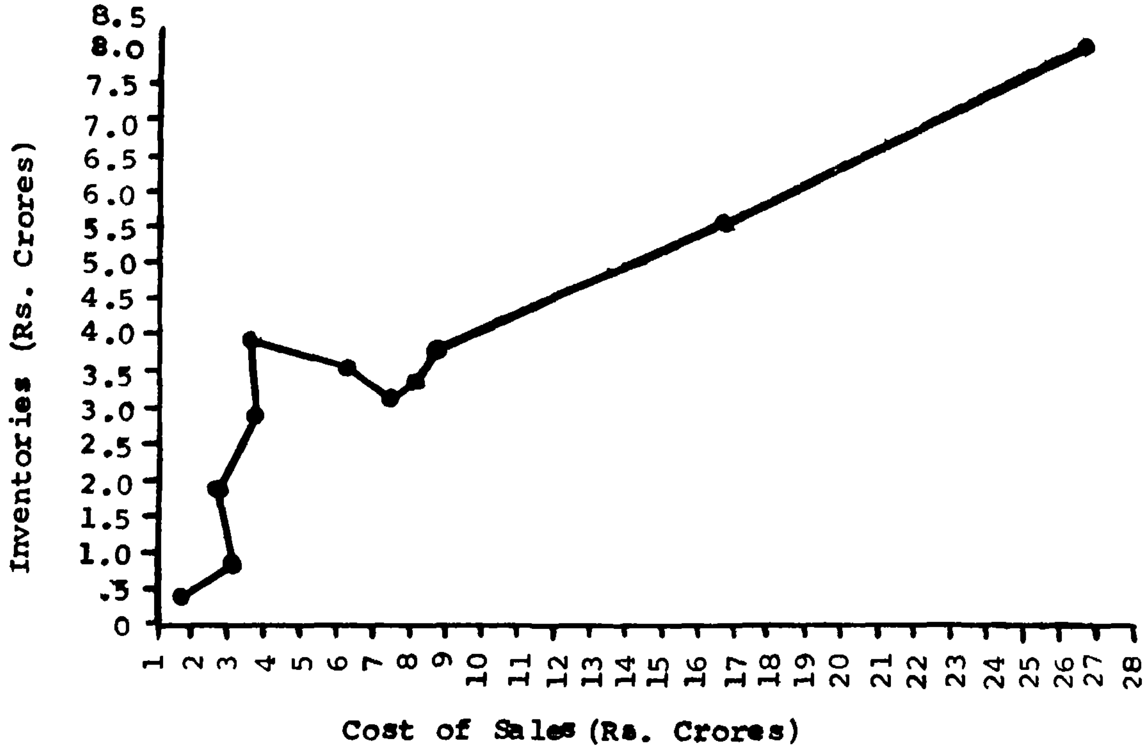
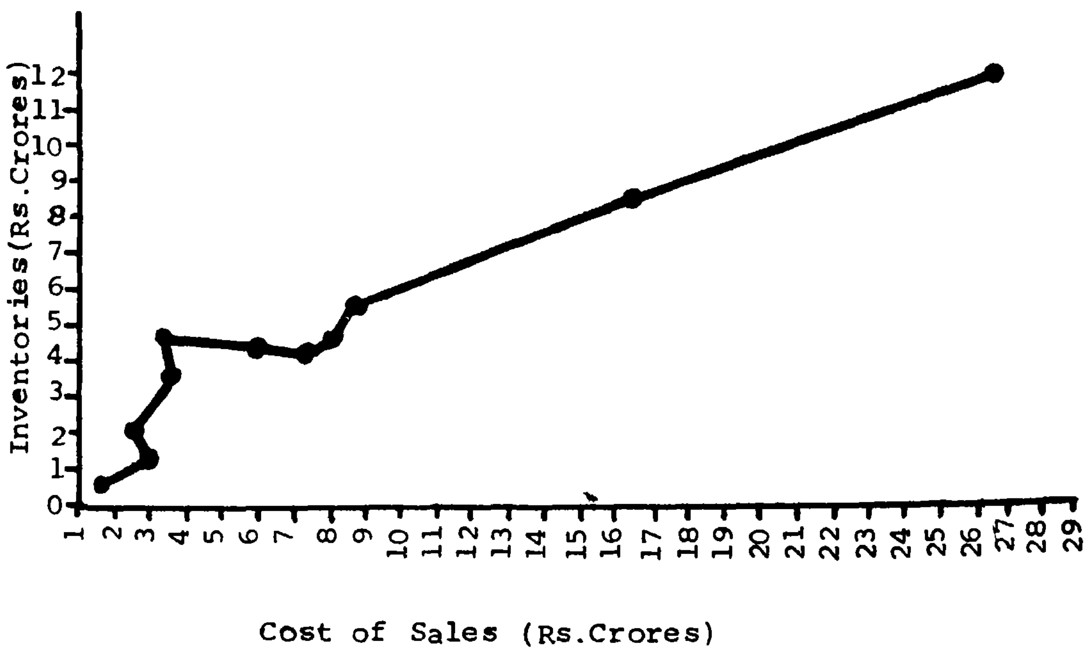


EXHIBIT - V

ALL INVENTORIES & COST OF SALES RELATIONSHIP AGRO-BASED ENTERPRISES



ed goods inventories three out of six group of years intercept 'a' is not significantly different from zero R^2 is very low in all the different groups of years varing between .842 to .482. This shows poor fit of this model and as such no conclusion can be drawn for inventories of finished goods.

Model II : The alternative equation $I = a + bS^{.5}$ assumes that inventories are a square root function of usage of sales. Regressions were again run for the different group of inventories in the same correlations as in Model I and in a number of groups of years The important results are indicated in Table IV.

The intercept 'a' for the period as a whole and also for the decade is—ve in both the cases and is significantly different from zero at 95 per cent confidence R^2 are .956 and .934. These facts together with application of other technical tests show though the data is responding to the model yet fails to capture reality For eight years and 1 to 9 years the intercept 'a' is—ve, but is not significantly different from zero In these two groups of years R^2 are .948 and 856 In the former case R^2 value is less than that of Model I for the said years and as such it would be safer to conclude the existence of some economies of scale in that period. For 1 to 9 years R^2 is relatively low and hence no conclusion be drawn. For finished goods stocks the R^2 is consistently low in all the groups of years and hence no conclusitn can be drawn from this Model.

Model III : The model $I = <S\beta$ was converted into logarthmic form log I = Log $< + \beta$ Log S for statistical convenience Regressions were run for different components of inventories in the same relationship

TABLE IV

Regression of Inventories to Usage : I—a bS.^{5}

Parameters for Analysis	**1967-68 & £969-70 to 1975-76**		**1966-67 to 1975-76**	
	Materials & spare	**Finished goods**	**Materials & spares**	**Finished goods**
1	2	3	4	5
No. of observations	8	8	11	11
a—coefficient	— 15	— 40	—0.39	—1.17
standard error	14	.92	0.13	0.64
t—value	—1 06	— 44	—3 09	—1.83
b—coefficient	.5922	1 4750	.7494	1.7315
standard error	.0565	3068	.0536	0.2268
t—value	10 48	4 807	13.99	7.64
R^2	948	.793	.956	.866
F—variance ratio	109 92	23 11	195.62	58.31

TABLE—V

Regression of Inventories to Usage : Log I = Log < + β Logs

Parameters for Analysis	**1967-68 & 1969-70 to 1975-76**		**1966-67 to 1975-76**	
	Materials & spares	**Finaished goods**	**Materials & spares**	**Finished goods**
No. of observations	3	8	11	11
β	0.5664	.6528	0.6719	0.8828
standard error	.10	.23	0.0713	0.1844
t—value	5 90	2.86	9.43	4.79
Log <	—.7857	—.0867	—.90	—0.60
standard error	.1444	.5553	.10	0.48
t—value	—5.44	—1.56	—9.41	—1.25
R^2	.853	.577	.908	.718
F—variance ratio	34 84	8.20	88.84	22.92

riod showed no signs of ratonalisation and had been growing in some unplanned manner as judged from the trends in turnover ratio. Thereafter in the last six years efforts seem to have been gradually made to reduce their levels and achieve higher 'mileage' from the money invested in stocks. On the whole some advantage at economics of scale have been taken over the period of study.

(ii) If inventories had moved in square root relationship with their value of produce through effective management planning and control, this group of enterprises would have had about 79 per cent less inventories in the terminal year of this study.

(iii) The inventories of raw materials and spares over the period as a whole, have responded very favourable to Model I and indicate economics of scale. The analysis of growth rates for this component of inventory over the same period showed excessive holding of stocks to the extent of about 55 per cent in the terminal year of the period.

(iv) The WIP stocks during the period were equal to 6 days of produce on six occasions and in the five years varied from one to nine days of cost of sales. This level of stock was not found to be significantly large, and reflected the working technology of the group.

(v) The finished stocks in the first five years of the period had been increasing in an unplanned manner and that resulted in a sharply falling turnover ratio. During the last six years the turns rate improved but could not reach the high level of inital years. Thus if the two tail ends of the decade are compared there is no improvement in management of this category of stocks.

(vi) Due to erratic movements in the inventories of finished goods, the application of three models did not show a good fit and as a result no conclusion could be drawn.

(vii) The analysis of growth rates and evidence from one case study, give confidence about the existence of considerable scope of reduction in inventories of finished stocks. If in this group of enterprises finished stocks had moved in square-root relationship with cost of sales, then the inventory level in the last year of the period could be less by about 80 per cent. In groups of years 1 to 7, 1 to 8 and 1 to 9 this component of inventory has increased at a faster compound growth rate than value of produce.

(viii) The available evidence supports the hypothesis that level of inventories particularly in finished goods is higher than what is required for efficient operation.

(ix) Experience has shown that a reduction of about 1/3rd of stocks is within easy reach of management through modern inventory techniques. This will mean a release of about Rs. 4 crore of capital from active use apart from saving 10 to 15 per cent of annual carrying cost of stocks

RURAL INDUSTRIES PROJECTS

Evaluation Report

Programme Evaluation Organisation
Planning Commission

THE central objective before the Rural Industrial Projects was to evolve effective techniques, methods, and programmes for promoting intensive development of village and small industries. The choice of industries to be encouraged and the level of technology to be sponsored, were to be related to the economy of the selected areas.

With the expansion undertaken towards the end of the Fourth Five Year Plan, 106 Projects are now functioning, 45 of which have completed a decade of working. The current annual Plan outlay on the Programme is placed around Rs. 4.5 crore

The Projects are funded by the Central Government as a centrally-sponsored Programme. Project officers, supported by a set of technical officers, are posted to each Project area, with resources available for support to a wide range of activities, which cover industrial potential surveys, technical assistance including identification of projects and preparation of project reports, provision of loans, training of artisans and workmen, supply of raw materials, provision of marketing facilities, etc.

Of the initial set of 45 Projects, the present evaluation exercise involved intensive studies in as many as 26 Projects. Its objectives were to examine :—

(a) how the Programme has been planned and administered,

(b) how much the various components of the Programme have contributed to the achievement of the broad objectives of the Programme.

(c) to what extent have the various components of the Programme benefited the local people.

Conclusions of the evaluation study

An analysis of the information obtained in the course of the Study suggests the following major conclusions :

(a) The surveys conducted by the Project staff used a generalised proforma which did not permit of a satisfactory appreciation of the local economy or of potentialities of the regions covered by the Projects. The units, which actually came up, bore no relation to the so-called 'potential', as brought out by the Surveys.

(b) There was inadequate commitment of the State Governments to the Programme, as evidenced from (i) the frequent changes in project officers as well as technical officers, (ii) lack of the required direction from higher levels, due to inadequate appreciation of the fact that the real objective of these Projects was to develop a methodology for generating patterns of rural industrialisation, appropriate to the special features of different localities, (iii) lack of integration of this Programme with the activities of other agencies in the field of small and village industries, (iv) inadequate and inaccurate monitoring/feedback systems between the field and the policy making/funding levels of administration

(c) Several components of the RIP strategy registered only a marginal impact; mention may be made here of the general lack of success of schemes for technical assistance, with only about 6 per cent of the units in Project areas having reported any operational contact with the Project authorities,

or for training, provision of raw materials, marketing support, etc. A large part of the promotional expenditure proved to be unproductive. The only major element which created an impact was the loaning programme, which benefited about 19 per cent of the total units found in existence. Most of the funds for units started in the RIP areas, however, came from other institutions, i.e. banks, state financial corporations, etc., suggesting that the RIP had virtually acquired the role of another but less effective and important lending agency.

(d) Establishment and promotional costs per job varied from Project to Project, over an extremely wide range. While 6 out of the 26 Projects surveyed reported average costs on this account at less than Rs. 3,000 per job, as many as 9 Projects reported costs of Rs. 10,000 or more per job.

(e) A significant part of the funds was disbursed in towns with population more than 15,000 which areas were specifically excluded from the area of operation of the RIPs.

(f) A negligible fraction of the financial assistance disbursed went to rural artisans.

Recommended lines of action

The above conclusions point to the need to re-amine afresh the utility of the approach so far veloped to attain the objectives which were in view the time of initiating the Programme. The analysis ntained in the Report suggests the following action :

The methodology of industrial potential surveys and · working out plans suited to the local situations ould be improved by—

(a) noting the specific availability of local raw materials, the range of skills found among craftsmen and artisans as well as among workers in small industry, the current trends in the growth of household and other industries, in the rural areas;

(b) drawing up a list of industries which could be set up, upgraded or reorganised, in the light of this assessment;

(c) indicating, in a 2-3 year Plan of Action, the respective roles of the Khadi & Village Industries Commission, the State Khadi Boards, as also of the other State agencies concerned with the development of small and village industries and the specialised Boards for Handlooms, Handicrafts, etc. It is necessary that, at the Projects level, the schemes undertaken by these agencies are fully dovetailed with list of industries to be promoted by the RIPs. The consequent role of the RIPs should fully take into account the activities also of the commercial banks and State financial institutions, and should thereafter spell out the scope for RIPs' own efforts ;

(d) directing the RIP thrust at activities which create, or could be reorganised to create, employment opportunities for the craftsmen and artisans, among whom under-employment and unemployment is generally severe; the RIPs should particularly support those lines which are not locally covered by the other agencies, for instance pertaining to masonry, tailoring, leather work, blacksmithy, carpentry, pottery, sericulture, electric wiring and maintenance of electrical fittings, appliances etc, diesel and electric pumps and motors, plumbing, welding, maintenance of agricultural equipment, agricultural implements, and so on;

(e) intensifying the contact between the Project authorities, and the actual recipient of funds as well as with the other field agencies. A much greater degree of guidance in design, technology improvement, quality control is required ;

(f) devoting much greater attention to marketing, elimination of unscrupulous middlemen and ensuring steady supply of raw materials ;

(g) considering the poor feedback so far available to the Ministry of Industrial Development, which has resulted in several of the problems highlighted in the present Evaluation Report not having been spotted by the administrators, a reliable and a well defined monitoring system should be set up by the Ministry. This system reports, but should also provide for a systematic means of verifying periodically the impact of different components of RIP expenditure as well as of the progress being made in different Project areas in respect of the overall objectives of the Programme.

There is a clear need to re-examine the question of area of operation of the Projects. There are the[fol]owing two major issues on which firm decisions are [req]uired to be taken and implemented.

(a) firstly, the exclusion of towns with population of more than 15,000 from the area of operation of the RIPs, and

(b) secondly, that of coverage of the entire district, instead of 3-5 blocks as earlier under the RIPs.

f RIPs are considered as an agency for promoting development of the semi-urban towns, say with opulation-size of 25,000 or more which places may regarded as present or potential growth centres They uld have to concentrate largely on these towns and nprehensively assist these activities which are erging in these centres In the alternate, the RIP ogramme would be regarded as a means of utilising training, supplies and marketing, etc. support ded for the development of industries in smaller ces and in villages and other outlying areas The t that despite a ban, a large part of RIP funds ind their way to the larger towns, indicates that the mer seems to be the easier option, also involving itively lower costs of generation of jobs The e for the inclusion of the towns of population-size ger than 15,000 or may be 25,000 on 1971 census ires) is however, not consistent with the objective of couraging the growth of small and village industries typically rural locations.

The decision about the coverage of whole, or part, of the district under RIPs would be dependent upon the view taken in regard to the above issues. If the emphasis is on promotion of activities in smaller locations, the Project resources of manpower, technical support and finance etc appear at present to be spread very thinly over too large an area, and it would be necessary to choose one or two large towns in a district as a base from which villages in the 'command area' could be developed. District coverage would appear to be feasible only if RIP activity is substantially restricted to the emerging growth centres, namely the semi-rural towns or villages showing significant clustering of skills.

Another matter on which a decision is urgently needed, which partly relates to the above major issues of strategy, is about the extent of direct loaning which should be undertaken by the RIPs. With the increasing extention of branches of the banks to far-flung places, and the emergence of a situation where small towns and villages are being covered by banks, there would appear to be no reason for RIPs to continue to disburse direct loans in such areas except where banks have not yet been set up. The loaning activity of RIP should progressively diminish with the spread of rural banks and the promotional role to be played by RIPs could include provision of seed (margin money) loans for units which are sponsored to banks for the provision of credit. ☐

Fall in Unemployment Rate

THE unemployment rate had been brought down to eight per cent in 1977-78 from 8.5 per cent in 1973, thanks to the employment generating sche[me]s launched. At least one million man-years of [em]ployment would have been created since the food-[for]-work programme was launched. The offtake of [foo]d-grains was one million tonnes. The programme [had] generated substantial employment opportunities, [esp]ecially in the rural areas. The Antyodaya pro[gra]mme in Rajasthan had benefited about 160,000 [fam]ilies in the form of wages of self-employment [Th]e average attendance in the employment guarantee scheme of Maharashtra involved about 9,11,000 persons in 1978-79 Also the increase in irrigation potential by about 2 6 million hectares in 1978-79 would generate additional employment of 3,80,000 man-years. The number of additional beneficiaries from the small farmers' development agency scheme in 1978-79 was 7,70,000. Similarly, 9,00,000 persons benefited from the operation flood milk scheme. The number of persons employed in Khadi and Village industries in 1978 was 2 4 million which was higher than in 1977.

Birth of a New Class of Undesirables

P. C. Joshi

Professor

Institute of Economic Growth, Delhi

IF there is one field where the gap between promise and performance has been the widest in India since independence, it is the field of and reforms. 'Land to the tiller' was the cry of the and-hungry peasants during the independence struggle. It was also the most important item in the national conomic programme announced by Nehru immediate- after freedom from colonial rule. During more than nree decades of freedom, the peasant has been a itness to several rounds of land reforms initiated by e Central Government and implemented by the State iovernments. But the promise of land to the man ehind the plough has still to be kept.

Land reforms have so far only helped many of the entier landlords of the colonial era to turn into gentlemen farmers' of independent India. They have lso helped the upper, and even sometimes the middle, ayers of the peasantry to move upward in the agrarian adder and to emerge as independent peasants prorietors. These gentlemen farmers and rich peasants ave served as the main agents of agricultural deveopment under the Five Year Plans. They have been e principal beneficiaries of massive State subsidies nd assistance to rural areas. As surplus-producing armers they have also profited most from favourable erms of trade for agriculture and from the new gricultural technology. The emergence of these new lasses have no doubt marked the end of stagnation n Indian agriculture which was a chronic feature f the colonial period. This is reflected in the fact nat foodgrains production which stood at about 0 million tons at the time of independence rose to bout 125 million tons in 1977-78.

Impressed by this growth many in India and abroad eel that the key to further growth lies not in land eforms any more but in technological transformation f India's rural economy. They refer to the States of Punjab and Haryana which have been transformed y the Green Revolution. It seems to many that these wo States show to the rest the image of their own uture ; they also demonstrate the key role of new gricultural technology for moving towards this uture.

India's agricultural policy itself reflects a shift of emphasis from institutional change to diffusion of new technology within the *given* agrarian structure. Even when official agencies mention land reforms in economic policy documents, they mean by land reforms not any fundamental restructuring of land ownership but only some relief measures for the rural poor. Some State Governments have already expressed their intention to revise even the existing and loose provisions of tenancy reforms and land ceilings in a further retrograde direction. Genuine land reforms thus arouse neither political will nor energy of the existing ruling class in India.

Does it mean then that the agrarian programme as it was understood in India in the past as one of 'land to the tiller' has no relevance any more? Does it mean then that the gentlemen farmers and the rich peasants can deliver the goods and that the problem of the vast masses of poor peasants and labourers has to be explored not within but outside the land system? Does it mean then that the goal of a cooperative rural economy cherished by Gandhi and Nehru has to be abandoned in favour of a capitalistic rural economy in which not the *working peasant* but the profit-seeking *large farmer* would be pivot of the economy? These are questions agitating thoughtful members of Indian society whose minds are not fuddled by the euphoria of the Green Revolution ; who are fully aware of the contradictory nature of the Green Revolution which benefits some and leaves many behind and who have not forgotten that the ruling class has still 'promises to keep' to the peasants constituting the bulk of the Indian nation.

The first hard fact to note is that a substantial transfer of labour force from agriculture to modern industry is not feasible in the foreseable future in India. It is noteworthy that all the Plans of industrialisation since the 50's have not even marginally altered the proportion of labour force dependent on agriculture, which has remained stucked around 74 per cent for more than 5-1|2 decades (1921-76). Any realistic land policy, therefore, must give high priority to re-

structuring the agrarian stucture in a manner that it s able to absorb this continuing population pressure on and now and in the coming decades For this it is necessary to make such intitutional and technological choices as can help simultaneously to raise agricultural productivity and to provide employment to as large a section of the rural labour force as possible. It is this dual challenge which cannot be met by transfer of institutions and technology from West European countries having a low man-land ratio to India having a high-man-land ratio. This calls for innovation of institutions and technologies suited to a labour-surplus country. The fact that foreign expertise has been liberally provided to India by countries vastly dissimilar to India and least equipped to provide advice has itself caused serious complications

It seems that in view of Indian conditions the pre-independence slogan of 'land to the tiller' was not only good politics but also sound economics The evolution of the agrarian system over the years, however, has not proceeded in accordance with this principle This is borne out by the latest data relating to the distribution of land in India. According to the Agricultural Census of 1970-71, 4 per cent of the farms of 10 hectares and above cultivated as much as 31 per cent of the land area. At the other end 70 per cent of 2 hectares or less cultivated only 21 per cent of the land area. (Again, 51 per cent of the farms of 1 hectare or less cultivated only 9 per cent of the land area) It is clear that the old land system has been replaced by a new system having large farmers at the top and small and tiny producers and labourers at the bottom. While the large farmers have underutilised resources of land and capital, the latter have vast but under-utilised labour The important point to note is that the surplus labour at the bottom is not absorbed by the wage labour provided by large farms at the top. Under the new system landlessness has increased much more than the growth of wage-labour

That this new system is more unjust than the landlord tenant system can be measured by this simple yardstick. The rural poor had far greater access to land under the landlord-tenant system than they have under the new system of 'owner-cultivation'. One must remember that this owner-cultivation has come about by the inequitous method of landlords evicting their tenants and thereby resuming land for self-cultivation. In some areas tenancy continues, with change of the tenant from season to season ; but it is concealed by the appearance of owner-cultivation with a view to evading tenancy laws.

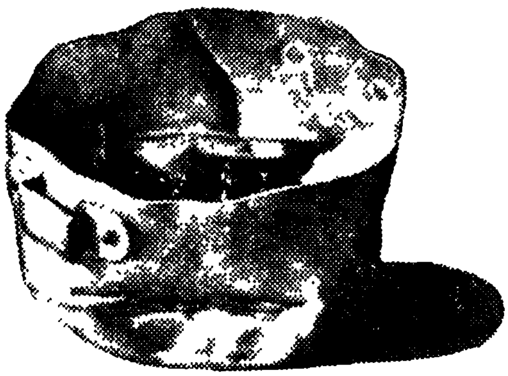
The decline of tenancy of the old type thus meant not 'land to the tiller' but the ousting of the tiller from the land in many areas. True, under the old tenancy system, the tenant did not own the land but it is he who had land in his physical possession. Moreover, tenancy was the mechanism by which the inequity in the distribution of landownership was corrected , the distribution of operational land holdings was much less skewed than that of ownership holdings. Tenancy also carried with it a lot of security for the rural poor as part of the patron-client relation. Tenancy reform no doubt brought the much-needed freedom from forced labour and from other dues exacted from time to time by the landlords. But they also disturbed an age old framework of security, redistribution and mutual assistance, the absence of which hurts now the rural poor much more than the rural rich

The new landed class is far more greedy and not at all inclined to recognise any obligations towards the poor. Having been ousted from the old system, the poor are not absorbed into any new system either in the village or in the town Jan Breman's village study of 'de-patronisation' in South Gujarat brings out in a telling manner the tragedy of these 'unwanted members' of both rural and urban societies.

In some areas tenancy continues, with change of the tenant from season to season; but is concealed by the appearance of owner cultivation, with a view to evading tenancy laws.

This fast-growing marginalisation of the poor peasant and labourer in the new system is at once unjust and irrational In India's caste-ridden society the poor peasants and labourers are the only repository of skills of farming and of productive values which could have been capitalised if peasant agriculture had been made the pivot of agricultural planning. But within the new capitalistic agriculture peasant economy persists only as a refuse from total proletarinisation What Sulbha Brahme reveals for the state of Maharashtra has much wider significance. "Peasant farming", she writes, "provides for maintenance of urban industrial workers' family as well as the reproduction of workers at a considerably lower cost in the village The village provides some kind of a social insurance to the village-born and at the same time to the rural unemployed. There is no steady growth in agriculture, the natural resource base deteriorates, the problem of poverty and unemployment deepens, yet the situation does not become explosive, thanks to persistence of small farming".

(Contd on page 24)



Progress in Cottage Match

P. D. Tyagi
Researh Fellow,
Publications & Information Dte
CSIR, New Delhi

MATCH has kindled a flame of controversy since the release of 1979-80 budget From then the Government is attempting to shift the manufature of match stick industry into the cottage sector The Government feels that for every six persons employed in the mechanised match unit, 22 can be employed in the non-mechanised sector Wimco, however, claims that they pay their workers Rs 35 a day compared to Rs. 3—3 50 a day paid in the non-mechanised sector and that this is more than sufficient to support the entire family

Why Cottage Match ?

On an average, every single individual has to use 2-1/2 match sticks a day or around 900 sticks a year in the form of a standardoised boxes of 50 sticks each That makes for a demand of 9 7 crore gross boxes per year in the country entailing the consumption of an estimated 750 lakh cubic feet of wood, about a lakh tonnes of paper for wraping the boxes and for packing them for trade, chemicals, sulphur igniting agents, waxes etc A total of over 60,000 crores of sticks have to be individually made, packed into 1200 crore boxes which have to be retailed individually within the country. Thus, making match sticks a highly labour intensive industry and becomes amenable only to be organised on cottage sector.

The cottage match industry provide employment to a large section of society in India With a total investment of Rs 22,150 in fixed capital (Rs. 8,000), equipment (Rs 8,100) and working expenses per month (Rs. 6,000), the cottage match unit works out a net profit of Rs 18,000 per annum after providing for the part-time employment to 25 persons In 1978-79 alone this sector employed 23,856 persons.

Next the use of machines in the cottage sector has made match making a low capital consuming and a highly labour intensive industry. It has been estimated that while in the mechanised sector, the capital needed amounts to Rs. 10,000 per person employed, the amount of capital needed in the cottage sector works out at only Rs. 600 per person.

In India first cottage match unit was set up at Sattur (Tamil Nadu) in 1925 Since then the country has established 2,700 units till today. At present, India makes four crore match boxes a day in all sectors and these are the cheapest in the world. Every third match-box used in the world is Indian. Yet India's per capita consumption at 2-1/2 sticks per head per day is perhaps the lowest in the world.

With a view to developing cottage match, the Khadi and Village Industries Commission has set up technical extension centres equipped with laboratories at Hyderabad, Ambala, Sewapuri, Delhi and Sattur between 1975-77 It also set up quality testing and control and standardisation unit at Dahanu (Thane). A second such centre will be set up at Sattur. To improve the design of the cottage match the commission has also set up a design development centre for the first time in the country

Production

The production of match in the cottage sector is on the increase since its inception The production which was 3,563 gross boxes valued at Rs. 27,000 in 1955-56 went up to 20,474 gross boxes valued at Rs 1,54,000 in 1960-61. In 1977-78, the production accounted for about 70 lakh gross boxes valued at Rs 7 crore It is expected that by the end of 1979-80, the production will be worth Rs 22 crore as against Rs 12 crore in 1978-79, which amounts to a share of 24 per cent of the countrys total match production

Today, the middle and cottage match factories constitute about 70 per cent of the country's total match production With the reduction in excise duty, the cottage match sector has to pay Rs. 1.60 per gross box only. It is, therefore, expected that, by 1981-82 the production of matches in this sector will go up to Rs 44 crore

Demand

During the seventies, the average demand fo matches was placed at around 2.2 sticks per capita Last year, the demand was around 2.5 match stick per capita According to KVIC, the demand ever year increases by about 57 lakh gross boxes wort about Rs. 10-12 crore. Such an additional incremei in annual demand alone provides prospects for estal lishing 570 cottage units for match making in differe parts in India.

The main problem of cottage match units is scarcity f softwood, the short supply of which forced coun- ·ies like Sri Lanka to import matches on large scale· t is expected that the availability of softwood in the ext 10 years will be less than half the requirements. 'urther cottage units has to pay Rs. 30 a cubic foot or softwood whereas mechanised sector only Rs. 4. n this context, the recent changes in excise duty nay partly neutralise the cost of production. To meet his challenge, WIMCO has successfuly marketed fully ardboard friction-printed match boxes. WIMCO has lso begun to promote the silviculture of popular trees, fast growing matchwood species.

Second major problem of cottage units is of chemi- als used in match production. In this connection, the tep taken by WIMCO is praiseworthy. It has under- aken the manufacture of potassium chlorate, glue, lue match paper, sodium chlorate and perchlorate. More recently, KVIC has also set up 16 raw material anks.

Thirdly, even in the cottage sector, there is domi- ance of a few units. It is reported that 14 families n two districts in Tamil Nadu have monopoly in this ector This tendency also is a hurdle in spreading the rowth in a truly decentralised style.

Lastly, the non-mechanised sector requires proper co-ordination and direction by official agencies in order to bring about technological change. The success of this sector depends on the training of artisans. In this context, the work done by KVIC can not be ignored. With the existing training centres at only Maharashtra and Tamil Nadu, the Commission is planning to set up such centres in U.P., Kerala, Kar- nataka and A.P. also

Prospects

From above, one concludes that in a country like India, cottage match units can provide for job-oriented and labour intensive programmes. In this context, KVIC has already planned to set up 6600 new units with a total outlay of Rs. 67 crore, during VI Plan period There are 10-12 crore people in the age- group of 15-59 years in the total workforce of 30 crore. Of this about 4 92 crore persons are esti- mated to get job opportunities in the Plan period Among job seekers, 90 lakh persons are expected from small scale industries and cottage sector wherein the share of cottage match units is very encouraging The Commission expects a total production capacity of 6.7 crore gross boxes with an employment poten- tial of 1.67 lakh full time jobs and an annual turn- over of Rs. 18 79 crore by the plan end. □

New Class of Undesirables

(Contd. from page 22)

The winds of commercialism and technical change lowing into the Indian countryside have further urned all traditional social relations and values topsy- urvy With its promise of spectacular increase in pro- uctivity in a short period, new agricultural techno- ogy has made large farmers more greedly and exploi- tive, the small and marginal farmers more land-hungry nd deprived, and the labourers far less inclined to tand denial of their due share in the gains from eco- omic growth. Gains from new technology are, how- ver, not open to everyone but only to those having ccess to land. to money capital and to political ower.

Before the new technology came, despite inequality n resources the production system in the large and he small holdings was not very dissimilar. In fact, er acre yields in small farms were higher than in arge farms. The new technology has vastly widened he disparity of production techniques in the large nd small holdings and so also in the capacity for ecuring returns from land. With small and marginal arms having no resources to avail of new technology, he productivity gap between large and small farms has vastly widened. New technology has thus set in motion increasing inequality in the distribution of income between classes. The basic source of this inequality is the initial inequality in the distribution of land ownership. Hence the dismal finding of one report after another that despite relatively rapid agri- cultural growth, the income levels of the poor pea- sants and labourers have tended to decline.

This trend of immiseration brings back to the subject of land reforms. The basic question is : Can the distribution of income be changed in favour of the rural poor without a prior shift in the distiibution of assets (i.e. land) in their favour ?

It may be noted that the new technology of the bio-logical-chemical variety is itself neutral to scale It has therefore strengthened the case not against but for land reforms. Given resource support, new technology has the potential of putting, the hitherto uneconomical and depressed, small peasant farms on the road to economic viability and growth. It has also the potential of vastly increasing both output and employment if a much lower land ceiling is imposed on existing large farms and the surplus redistributed among the land-hungry peasants. □

Decentralised Sector-Some Imponderables

Subhas J. Rele
Journalist

THERE are many in India, who while endorsing the wisdom of the Government's approach for development of decentralised sector argue that the government is going rather too fast. In their view, the smallness of an industrial unit should not be a criterion in itself for the State to extend support, assistance and subsidy. What exactly the unit produces and at what cost, is also an important point to consider. The simplistic classification of industries in the small, medium and large-scale sector must be discarded, they contend. The more purposeful distinction that must cover the regulation of the flow of resources, credit as well as raw material should be that between the units producing essential commodities and those not so engaged, whether they are in the small or big sector, private or public sector. Thus this obviously calls for the overall direction of the rural development as a whole It is naive to regard small-scale industries or even village industries as worthy of benevolent assistance from the social justice angle. There has to be a good deal of selectivity in the promotional policy for decentralised sector. What is therefore required is to promote the growth of the decentralised sector on the basis of strict economic criteria as a producer of a wide variety of goods and services at competitive costs and in a position to find a market for them. This will make for the viability of the decentralised sector in the industrial structure.

Referring to the persistent conflicts in India of two divergent economic policies based on developing village industries and small-scale industries on the one hand and large-scale industries on the other, Mr. C D H Cole has said : "I feel sure that there is a way of reconciling the two courses and that village development based on low expenditure of capital and high use of labour, has a great part to play in the coming campaign against poverty. The notion that India can be lifted speedily to a level with the great industrialised countries by intensive capital investment is unrealistic. I am not suggesting that India does not need capital—plainly it does, most of all for irrigation and hydro electric installations, for improved transport facilities and up to a point for the expansion of engineering and other advanced industries. But all that can be done in these ways will for a long time make only a small impact on the poverty of the people—and therewith a great inroad on the other ways of living—unless it is combined with the development of village industries and village construction designed to make better use of the abundant resources of labour rather than to rely mainly on methods which require expensive machines to do the work of men and women In this connection, government's influence was, I feel sure, wholly salutary. It was good economics as well as good sociology. It pointed a way both to successful warfare upon primary poverty and to the preservation of the essential structures of the Indian ways of life".

It is conceded that the decentralised sector has a meaningful role in the development process not insulated from or competitive to, but in vertical integration in the large-scale sector. The small-scale units which are horizontally placed in relation to the large-scale sector are either not viable or they are benami operations of the large-scale sector. There is also a view that a policy of promotion of small units by offering incentives and subsidy, if it is based merely on size and the static criteria of direct employment generated per unit of capital is bound to end in a fiasco.

Pre-requisites for Success

The success of decentralised sector would very much depend upon the enforcement of policies and proper choice of technology. What is essential is effective translation of policy in favour of entrepreneurial dispersal. Manufacturing is a precarious activity more so for a decentralised sector. It has to be remembered that decentralised industry and the rural development cannot be wished away into reality. The infrastructure for rural development must be built progressively to absorb higher and yet higher outlays. This would involve political and administrative decentralisation of an order for which the Government should be prepared. Mere exhortation on the virtues of decentaralisation is not enough.

Government should initiate the setting up of technical assistance because many small scale industries have been sponsored by very enthusiastic entrepreneurs without adequate technical knowledge of their product and of precise technical requirement of prospective customers. Very often we hear of labour-intensive technologies. Surprisingly enough, no exercise has been attempted to pinpoint the particular operation which requires more labour and less capital Sometimes small units are tied to big units whom they supply components and machinery work Big units are well established with customers and they increase prices whenever they find it necessary. It has been the experience of many small units that prices they get for the very components have remained stagnant for about a decade. They are not able to raise their prices because of severe competition amongst bigger units. The moot point is : How to get fair price for the products of the small scale sector ? In addition to this, the problem of credit and rejection of consignment because of technicy. The most important thing is make the local people partners in the industrial growth. It is very easy to say that the development programmes for rural areas should pay more attention to the utilisation of local skills, exploitation of local raw materials, etc The most challenging task is how to inculcate the cult of entrepreneurship. The village artisans from the very start are faced with major problems. To set up a small unit, he has to deal with a dozen or even more government bodies and even afterwards, at several points, he has to contact government agencies—for securing raw materials, credit from banks etc. There is need to underpin land reforms with agricultural inputs infrastructure, servicing and marketing facilities for the rural folks. A more imaginative and flexible approach is necessary to take advantage of the potential that exists for actual participation in the process of change The Government even after many years' rule seems to have no plan to break the stranglehold of vested interests in the rural areas.

Sometimes small units are tied to big units whom they supply components and machinery work. Big units are well established with customers and they increase prices whenever they find it necessary. The prices the small units get for the components remained stagnant for a decade.

cal deficiency is also there. There is a high added value between raw materials and finished goods in the large-scale sector whereas in the small-scale sector the added value is much lower. Basically, the small-scale economic system is labour-oriented and not capital-oriented.

The Cult of Entrepreneurship

A lot is being said about setting up village industries in these areas. This is not going to be an easy task as is often imagined. The realisation that there are abundant resources in our villages is not a new one. The village craftsmen have to be made aware of the new techniques, trade systems, markets, designs and tools and the facilities provided by the government. In order to implement these programmes, there is need to get the cooperation of social workers and voluntary organisations engaged. It is wrong to believe that the rural areas will develop merely by providing road facilities, machines on easy instalments, construction of industrial estates and liberalising the raw material poli-

The growth of decentralised sector is often conceived in isolation This is a wrong notion. In fact decentralised sector should be a part and parcel of the very strategy of industrialisation and economic development. In certain rural and small-scale units, for example, production could be an economic proposition only if improved or even capital-intensive methods are used. They are, on the other hand, village and small-scale industries which are best suited to the use of labour intensive methods. Economic consideration rather than ideology should dictate the choice of both types of small-scale industries in the strategy of industrial development There is scope for certain types of small scale industries which possess competitive advantages only on account of their small operations and which cannot only coexist but also expand as a necessary adjunct to the large-scale sector. An industry-wise and region-wise study of units must be undertaken by the village authorities and due measures to ensure them adequate business be found. The earlier this is done the better it would be.□

SLAUGHTER : SENTIMENT AND SANITY

N. S. Ramaswamy

Director, Indian Institute of Management Bangalore

THE issue of slaughter of cows has been in the news recently. The Chief Ministers of Kerala and West Bengal did not acceed to Bhave's appeal to ban cow slaughter. The Acharya finally ended his fast. Strangely enough, public response has been restricted largely to the propriety of the Acharya's drastic recourse, the sentiment of the people in Kerala, the apprehension of communal violence, etc. There are a number of related issues which have not been discussed at all in public. For a variety of reasons—ignorance, public apathy, unwillingness to face harsh realities and religious sentiment—issues connected with the slaughter of cattle and other animals have been kept out of public gaze and attention. This has led to enormous economic loss to the nation, particularly to the small man, and untold suffering to millions of animals tortured alike in working life and in death. This is an opportune time to launch a national debate on all aspects of the slaughter of cattle.

Ban on cow slaughter : Genesis of demand

If the ban on cow-slaughter derives its sanctity from the Directive Principles of the Constitution, one can point out that there are equally important Directive Principles that still await implementation. If the appeal for the ban of cow-slaughter is based on religious sentiment, bullocks qualify equally for the benefit of such a measure perhaps for, additionally, they are sacred to Hindus who worship them in the form of Nandi. So to a lesser degree is perhaps the buffalo, which is the vahana of Yama Dharma. If slaughter is to be brought under regulation, all animals, particularly those useful to man, should come within its purview.

Supreme Court Ruling

A Supreme Court judgement of 1958 on the subject states that the "total ban of slaughter of cow of all ages and calves of the buffaloes (male and female) was quite reasonable and valid and in consonance with the Directive Principles, laid down in Article 48 of the Constitution. A total ban of slaughter of the she-buffalo, or breeding bull or working bullock (cattle as well as buffaloes) as long as they are milching or as draught cattle was also reasonable and valid A total ban on slaughter of she-buffaloes, bulls and bullocks (cattle and buffaloes) after they cease to be capable of yielding milk or of breeding or working as draught animals could not be supported as reasonable (and) in the interest of the general public." The above is an excerpt from a newspaper report of the judgement. All the States, except Kerala and West Bengal, have enacted laws in varying forms in the light of the above ruling.

Economic Aspects

Let us review the economic aspect. Cows, bullocks and buffaloes in India may number about 234 millions. (See Appendix) The total investment on these will be anywhere between Rs. 15,000 to Rs. 20,000 crore and most of the money has come from small men. If camels, horses and donkeys, sheep, goats and pigs were added to this figure, the investment may aggregate Rs. 25,000 crore which roughly equals the investment in organized industry. In spite of this vast investment and the sizable contribution made by the animals to the economy, the animal system has not received the attention it deserves. Except in the breeding of milch cattle, dairying and the development of hospital-based veterinary services, most other aspects of the animal system have suffered neglect—for instance, the care of draught animals, their feed and utilization. The methods of slaughter continue to be inhuman and uneconomical and the recovery of by-products has been totally neglected. The loss to the nation must surely be of the order of hundreds of crores of rupees. Therefore, the whole cycle of the animal system, from birth—through utilization and care—to death, should be studied and appropriate policies formulated.

Work Animals

If the reason for banning cow-slaughter is based on economic reasoning, there is a better case for the

regulation of the slaughter of work-animals. Seventy million bullocks and eight million male buffaloes—as well as a few additional millions of cows, female buffaloes, horses, camels and mules, all used for draught—generate about 40 million horse-power of energy. This energy supply is critical to the country, and will not be easily replaced for many years to come in the rural sector at any rate. Power output of this magnitude exceeds the capacity for electrical power installed in the country. The investment cost of the replacement of other forms of energy may need twice that amount. Fifteen million carts are hauled by work-animals, and they cannot be replaced for a number of years to come by trucks. The investment in the bullock-cart system is valued at Rs. 3,000 crore.

Dependence of Animal Energy

Replacement, even if desirable, may not be possible, since animals are the only form of energy which is appropriate to conditions obtaining in this country. Sixty million farms are below two hectares, on which work-animals are the only feasible source of power—both for economic and technical reasons. Tillers and tractors need a much larger area for economic operation. Half of India's villages do not have roads fit enough for trucks and tractors, and only bullock-drawn vehicles can ply on such terrain. For short distances and small loads, tractors and trucks are uneconomical.

Two-thirds of the rural energy input comes from animals, and only ten per cent from hydel and fossil fuel sources. The rest of the power comes from human beings.

The present energy input has to be doubled in order to get the optimum output. Such vast quantities of energy can come only from work-animals. Millions of marginal farmers do not even have animals and they have at present to get them on hire. Petroleum will become increasingly scarcer and the country may have to fall back on animals.

Such is our dependence on animal energy. We have neither recognized the massive contribution of animals to economic activity nor cared for their welfare. In fact, Mao-tse Tung himself had led an agitation for a ban on bullock-slaughter. China is to-day raising work-buffaloes in a big way. By contrast, we are, relatively speaking, neglecting work animals—not only operationally but in humanitarian terms. Cows, buffaloes and bullocks not only serve man during their working life but leave behind meat and blood and bone, horn and hoof, hormones a veral other by-products. A lack of appreciat their value and travail is part of the reason fo neglect.

The Economic Compulsion in Slaughter

Ban or no ban, animals will be looked af slaughtered depending on what the aanimal can afford and on what the animal or carcass to him in money terms. This may sound cynical and does mean undue deference to mism but it is true. In spite of the ban on cow-sla in most of the States, cows are being slaughtere large scale in clandestine ways. This is eviden the all-India and statewise statistics. For the c as a whole, only 70 cows are alive for every 10 locks, which means that, of the remaining 30 bu at least 20 have been slaughtered. Bullocks cc to slog until they are too weak or too ill to wo longer. In the case of cows, they stop loctation f five years ahead of their normal life and, they a for slaughter soon after they become dry. F country as a whole, the normal sex ratio at b 1:1 and, generally speaking, mortality rates a same. What these figures mean is that cows are unsupportable after they can calve no longer. further expenditure on them is bound to be infruc they are sold off and sent for slaughter. As p report of the National Commission on Agric there were 72 million bullocks and 56 million c all adults, and exclusive of young stock. Startin the existing imbalance in the male-female ratio vines, 16 million cows have been slaughtered course of, say, 12 years.

It is precisely in Uttar Pradesh and Bihar many of the advocates of cow-slaughter are found that we have the lowest ratio of cows t locks. There now exist only 55 cows in UP and for every hundred bullocks. Thus, in one gene in these two States alone, millions of cows hav slaughtered. Again, it is in Kerala that the num cows is thrice than that of bullocks. This is of cou due to any special affection for cows. Bulloc raised for slaughter as they do not need so man mals for ploughing. Cows are well cared for b of their milk. Kerala gets its requirements of and bullocks from the other States.

Probably, many cows die a natural death an do so earlier than bullocks since most of the fa cannot bear to see their dear cows being s slaughter. Their sentiment has to be respected even admired. Wherever there is p

Table 1

LIVESTOCK POPULATION 1972

(in millions)

Class			Total
Cattle			
Adult Cows	56		
Adult Bullocks	74		
		130	
Young Stock		48	178
Buffaloes			
Females	30		
Male	8		
		38	
Young Stock		18	56
Bovine (Bullocks & Buffaloes			234
Large Animals			
Horses & Ponies		1	
Donkeys		1	
Mules		1	
Camels		1	4
Small Animals			
Sheep			40
Goats			68
Pigs			6

still available, they will be kept till their natural death; but this is not true of most parts of India where there is an acute dearth of pasture—and too dear to be wasted on useless cattle. In fact, the availability of land per animal in India is very low indeed. There are other ways than slaughter and for the owner, the suffering that is not seen does not have to be endured.

The case for 'No Slaughter'

In a society, which reveres cows and bullocks and treats them as partners—and not as commodities as in the West—a case could perhaps be made out for maintaining them till their natural death. After all, people are not killed off soon after their utility to society is over Just as capital appreciates in value from labour power, man adds to his value by appropriating it from animals. The total contribution of an animal—whether a milch or draught animal—can be amortized over the expected natural life of these animals. After all, the animals have worked and contributed when they can. Can they not be allowed to die a natural death? But economic man does not regard work-animals in that light, though a Hindu would probably assent to such argument. But sentiment, alas, has to be set aside for the sake of economics and its compulsions

The case for Slaughter

There may be about five million sterile cows which have never calved. There may be another five millions which have finished their lactation cycles, and will not therefore yield any more milk. At any one time therefore, there may well be as many as one crore cows not useful to man except perhaps as a companion or an object of pity. Even if, conservatively, the country spend one rupee a day on keeping an animal alive, the expenditure on the maintenance of obsoloscent cattle may amount to Rs. 300 to 400 crore a year **Pinirapoles** and **goshalas** are being tried out, but these are as yet too few or too scatted for the movement to spread in any significant measure But public policy should not blatantly offend against sentiment.

Animal Suffering : Cruelty & Economics

Bullocks are worse off than cows. Cows suffer due only to underfeeding or even starvation and occasional

abuse as well as at the moment of extermination. Bullocks suffer right through their lives. Some are branded with a hot iron; horns are removed in some parts of India; a good number are castrated by their tests being crushed. But everywhere these beasts of burden are underfed and overworked; and sick and injured animals are put to work. They get millions of beatings right under one's nose so to speak; their tails are twisted and their bodies pierced with sharp nails—all this in order to make the animal haul loads beyond its capacity. And when their utility to man is over, these animals are marched off up to 300 miles to their death, tied in twos and fours. In the end, one pays the price for each of these acts of cruelty. For instance, branding and beating damage leather, long marches affect the quality of the beef, and crude modes of castration endanger animal life and enfeeble the animal which loses much of its fat.

Losses from ill treatment of male buffaloes

There exist 58 million buffaloes in India today, of which eight million are males and 30 million females. The rest are young, the sex ratio of which is not known. This just shows that 22 million male calves were disposed of before they reached adulthood. This loss to owner and certainly to country is fantastic. It has been claimed that male mortality is high. This is simply not true. It is known that male calves are not cared for and are actually abandoned soon after birth to die of dehydration and starvation. This at a time when there is a shortage of energy on the farms and thousands of marginal farmers cannot afford to have an animal at all. If these animals were propertly raised, they can be used as draught cattle or for meat or both. Assuming an average life of eleven years, and that two million claves or so are abandoned every year, Rs. 200 crore are thrown away each year. As against this, China has raised 50 million work-buffaloes. Care is lavished on them so much so buffaloes are fitted with net nylon socks to protect their hooves and pasterns. Work-buffaloes may not be suitable in all regions. But they can be raised selectively where there is pasture and work conditions are conducive. State-wise statistics are available of the sex ratio, which reveals the extent of deliberate disposal of young calves. The milch buffaloes are well cared for; after all, 60 per cent of India's milk production comes from them.

From experience, law drives slaughter underground as in the case of prohibition. However, in our country, slaughter in approved slaughter-houses as well as makeshift and clandestine methods used in backyards are equally cruel. In India, animals suffer invariably **under both sets of conditions. The regulation of t slaughter of productive cattle can be attempted on when the slaughter system and organization a modernized.**

Case for Modernization

Both from the humanitarian and economic points view, the modernization of slaughter, rather th banning, appears to be the most urgent task befo the country. But there is so much ignorance abo slaughter in the country amongst the public at larg its leaders, policy-makers, and professionals. Since t whole process is so brutal and gruesome, the matt has been kept out of public gaze. There will be eno mous economic gain—both private and public—r sulting from the modernization of slaughter. U fortunately, even the recommendations of the Ta Force Report of the Government of India advocat the modernization of slaughter-houses have not y been taken up for implementation with any enth siasm.

Except two or three slaughter-houses in India, a the other 3000 slaughter-houses run by municipalit and 5000 others run by Panchayats are most prim tive and crude. Nobody appears to gain from the practices, and there can be no lobby for their cont nuance. In fact, every body loses—man, animal well as society. Losses run into hundreds of cro of rupees. It is a tragic thought that such want cruelty is being inflicted on the animals, and nobo appears even to gain from all this. Goat, sheep, ar pig can all then be slaughtered in adjunct slaught houses. Presently, these smaller animals are al being slaughtered in most painful ways. In fact, pi are beaten to death, or they are buried alive.

Methods of Slaughter

Three methods of slaughter are used. The **Jull** method, where the head is severed at one stroke, a pears to be the best from the animal's point of vie as pain to a still conscious animal is reduced to minimum. But the blood does not flow and cl inside. The blood is a carrier of viruses, and th method is therefore a health hazard. In the **Hal** and **Kosher** methods, the jugular vein is incised an the animal is bled to death. In health terms, it is le hazardous, and reportedly the beef is better. Th two latter methods are preferred by meat-eaters.

Stunning is the first step in modernization. It an essential first step for the **Halal** and **Kosher** m

(in millions)

I Input	Cows	Bullocks	Buffaloes (male)	Buffaloes (female)		
Population (1972 Census)	60	70	8	50		
Mortality	6	2	1	5		
Population alive	54	68	77	45		
II. Output					Total	Value (in crores of Rupees)
Meat (at 50kg. per animal)	270	340	30	200	840	180
Blood (at 8 kg. per animal)	43	54	5	36	140	6
Bone (at 30 kg. per animal)	162	204	26	135	520	40
Hide (at 15 kg per animal)	81	102	10	68	270	81
Horn and Hoof (in million pairs)	54	68	7	45	18	3 6
Fat (at 5 kg per animal)	27	34	15	25	100	32
Hormones	5 4	6 8	1 8	4 5	17 5	
Total						350

The average recovery of meat and by-products per animal is assumed for estimating potential recovery and yields Most of the meat and only a percentage of the bone is being recovered under the present system. But all other by-products like blood hormones, etc , are wasted Naturally, modernized recovery means greater value added.

thods. Unfortunately, a certain section of the Muslim community mistakenly believes that stunning does not satisfy certain requirements laid down in the scriptures. They might well change their views if they knew that the animal is alive and conscious after stunning and during slaughter. In some Muslim countries, stunning has already been made compulsory in law. The problem in India is ignorance and the lack of any organized effort to explain matters to those who object in all sincerity but may be misinformed In one or two slaughter-houses in India stunning has been introduced and the meat has found acceptance among consumers.

Modernization by stages

Stunning

There are several aspects to the modernization of slaughter and it can be carried through in stages The immediate need is to make a beginnnig.

Firstly, stunning quietens and immobilizes the animal rendering slaughter easy and faster. Secondly it reduces the pain in the conscious animal which will come as a great relief to all Indians—Hindus in particularly and animal-lovers Thirdly, the draining of blood before death—so essential for maintaining the quality of the meat and preventing health hazards—can be ensured Stunning is a relatively simple procedure and can be introduced not only in large modernized slaughter-houses but also in small ones run by the panchayats.

In the case of the larger animals, stunning is effected by a captive bolt pistol which may cost about Rs. 2000. Even if such pistols were distributed free to slaughter houses, it would cost only about Rs. 5 crore. The cost of stunning will work out to less than a rupee per animal. The smaller animals, such as the goat, sheep and pig, can be stunned with an electric device, the cost of which will be about the same This is the minimum that a country like India could do—the investing of Rs 5 crore in humane methods of slaughter as against Rs. 20,000 crore invested in work-animals Unfortunately, the priorities of our society are all so awry that intellectual topics or others that are important for religious, psychologi-

moral, economic and social reasons—never get a ·ing. Not from a large audience anyway.

he second step in modernization is to ensure that ıals are slaughtered one by one. According to the ting practice, animals are herded together in one n, and all the victims witness the process of saugh- of their kind. It seems highly undesirable that ıals should be killed off brutally while the others : on and wait their turn. They hear the wailing see the threshing about of the tied-down victim ıed to the floor by its human tormentors. They ic, are afflicted with terror and try to break loose. ırt from the psychological pain they undergo, the lity of the beef is avoidably affected. It is also believ- that they secrete valuable harmones which are lost. Western countries, animals are slaughtered cleanly, editiously and economcally. Even if, without ıning, the other methods can be emulated, that ıld be something. Let each animal die in the bliss of ›rance, in the privacy of a separate room and with- a scream. The present sight is brutal and grue- ıe indeed, where animals, with their feet tied up, low for hours in blood, in the dung and urine of r kind and await their turn.

Hygiene

'he third element of modernization is the improve- ıt of hygiene in slaughter houses. It is a paradox foyers and drawing rooms are kept clean, while ıghter-houses from where meat is recovered for sumption are allowed to be so incredibly dirty and ı pestilential. Meat gets contaminated, after being ared with blood, urine, dung and other wastes. h one of these is a health hazard in itself.

Transportation

The fourth element of modernization is to carry animals due for slaughter in specially made trucks trains. Today they are marched over long dis- :es and starved and beaten on the way. And ryone on the road knows where the animals are nd. In the West, the yearlings are fattened before ıghter.

By-products

The fifth aspect of modernization is mechanization the scientific recovery of by-products. Today ıt, far from tender, a portion of the hide, the blood the bones are being recovered. But recovery rates be substantially improved. Analysis shows that ›very yields can be improved by Rs. 200 to 300 crore in modernized slaughter-houses. If the pro- ducts were exported, the returns from modernization in money terms would be far greater. Hormones and enzymes acceptably recovered would not only mean more money; they would also bring in their wake new technologies for the production of pharmaceuticals. The same institutions entrusted with slaughter moder- nization enforcement and extension work could be asked to undertake the spread of procedures for the safe and scientific recovery of products from the car- cass. Meat, blood and the bones of dead animals can be recycled as animal food. Today, the dead animals are burried, though, in some locations, certain commu- nities eat the meat and salvage a part of the hide Today, our slaughter-houses thus offend against the ecology as well.

It is hoped that a case has been made out, from the health, economic as well as humanitarian points of view, for immediate attention being bestowed on the modernization of slaughter-houses by stages and in all aspects. The technologies for the recovery of cer- tain by-products, such as hormones, enzymes, liver extract, etc. may need foreign collaboration. For the rest, the modernization programme can be carried through with Indian resources exclusively. Further processing and distribution of products may again need foreign help; it may be sought and obtained on a selective basis. The export potential appears to be enormous. Modernization as well as the recovery and processing of by-products will give rise to additional employment. Investment for total modernization of slaughter at a single stroke may entail an expenditure of Rs. 500 crore. To repeat, a beginning can be made with State Capitals, district and taluk towns Panchayat slaughter-houses can be modernized par- tially with the introduction of stunning, and other basic and the cheaper elements of the modernization programme. The ban on slaughter can come about together with a great degree of modernization. □

*This paper pleads for an urgent reform of slaught- er practices which, as of now, are barbaric and waste- ful. There has been no special pleading for or against the slaughter of superannuated cows. Such a construction was put upon this paper by a national daily. Indeed, it has been proposed that the subject be discussed further as an objective of policy. More bullocks are being killed off prematurely than cows, and it is felt that our country cannot afford such waste of animal energy at this juncture. There will be slaughter houses as long as meat is eaten, and other animals are involved besides.

BOOKS

For Meaningful Development

The Affluence Machine, *by Abraham Thomas, Published by Abraham Thomas, 8A Owners Court, Montieth Lane Egmore, Madras-300008, Pages* 158 ; *Price Rs. 14-50*

THIS book is about the social, cultural and economic factors that have led to the explosive Growth of cities in the developing countries. Physical structures have been created in these cities which have no parallel in history, creating city states which are princely in wealth and prosperity, and the barren soils of impoverished countries.

Mr. Abraham Thomas, the author suggests that the torrent of raw economic power can be diverted to our underdeveloped regions to bring visible improvement to the lives of our poor within our lifetime, that we can assure decent education, medical attention and employment to our country without banishing teachers, doctors and entrepreneurs by decree to these areas.

The book is based primarily on a programme of action for development of backward areas. The author has placed great emphasis on the word 'development'. He writes, "In this book, 'development' shall mean the creation of these conditions where every child has the opportunity to study upto high school; where every exceptional child has the opportunity study as far as his capabilities will take him; where every person has assess to a doctor; medicines and medical facilities; where every person has the opportunity for steady employment with reasonable pay and normal working hours; where every person has the opportunity to change his job and to choose his profession; where the exceptional persons can ride to the top of his chosen career; where every family has a roof over their heads with such minimal amenities as piped water and electricity; where every person has access to the nation's cultural activities, entertainment and sports and the opportunity to partake to them if he so chooses; where every person has access to the varied products of modern industry that his income will permit him to buy".

This development can be achieved only through a practical programme of action.

To a school of thought that anticipates a world of shortages, a development programme that envisages a substantial expansion of consumption patterns will appear unwise. It is but inevitable that many scientists and politicians, who accept this thesis, recommend virtual status quo, leaving the villager to enjoy his so called simple life in his village. Mr. Thomas does not agree with such a viewpoint. He points out that if a development is to be meaningful, there is an indisputable need for increased consumption patterns. The only way a villager can be persuaded to remain at his level of consumption, with minimal education and opportunities is by not letting him know that something exists. The author feels that a primitive programme of rural uplift, justified by a pointing to a possible threat to future supplies of raw materials, can be as destructive towards children living today as shortage of raw materials can be to the coming generations.

Mr. Thomas attempts to prove that the crucial difference between rural and urban areas is fundamental to the problem of development; that accessibility plays a key role in the economics; that accessibility creates, in urban centres, virtually self-contained micro-economic systems that generate to a significant volume of service-oriented jobs.

However, scholars of many different disciplines such as economists, sociologists, scientists, nutritionists, geographers often appear to be studying the problem of purchasing power for millions with different approaches. The present study is one more attempt in this field.

N. S. Rele

A Useful Directory

Libraries in Delhi
Edited by S. K. Bhatia, D. K. Publication, Delhi 110007, Pages 48, Price Rs. 25.

SINCE independence there has been a phenomenal growth of the Capital City and with the growth of the metropolis the need for paying special attention to the establishment of libraries was felt. As a result of which large number of libraries have been established in Delhi. But most of these libraries were some what lost in the wilderness of palaces. Even the book sellers had no comprehensive knowledge about them.

For an optimum use of these libraries one must have a clear idea about the nature and location of them.

The compilation by Shri Bhatia is an appreciable attempt to meet that felt need.

—N. C.

A good study in neglected field

The Politics of Panchayati Raj Administration: *study of official and non-official relations; by* *... nan Pant, Concept Publishing Company Delhi* 19.., *Price Rs.* 35

PANCHAYAT Raj came into being in parts of India as early as 1959 Since it was felt that no development was possible unless the people actively participated in the programme, the Panchayat Raj was introduced as a means for furthering this involvement. The relationship between officials and non-officials is the basis of Panchayati Raj System Dr Pant in this study has investigated this problem in the field in respect of two blocks in the district of Bhagalpur He has tried to discover the sources and areas of conflicts and also the areas of co-operation and collaboration between officials and non-officials Attempts have been made to find out the reasons for the prevailing state of affairs. The study reaches the conclusion that structural reforms are not the panacea for the ills of the Panchayat Raj In five chapters auther has tried to answer this question with new insights drawn from the field The first Chapter titled, "Two Sets of functionaries" are of two parts, Socio-economic variables of officials and non-officials are compared in the first part An account of their attitudes and opinions about one another and about Panchayati Raj are investigated In the second part, attempts have been made to study the Socio-economic variables and attitudes of officials and non-officials Observations and investigations were confined to two Panchayat Samities in Bihar The questions that were asked from officials and non-officials were indentical

Age Caste, Landholding, income, education, and duration of service in the block are the Socio economic variables which have been taken for comparisen in the present study. These case studies show that 86.4 per cent of rural leaders i.e., Samiti members have atleast been through middle School It is to be noted that 11.36 per cent of the Panchayat Samiti members are ... graduate or post-graduate

... analysis based on statistics shows that maximum ... er of officials i.e. 51.11 per cent hail from upper ... Backward Castes represent 42.22 per cent while ... uled Castees and Muslims have negligible number ... 33 per cent each It could be found that non-... ls have generally large landholdings than officials It was also found that they are richer than officials

His enquiry reveals that 90.57 per cent officials feel they support each other 26.41 per cent officials and 12 per cent non-officials felt that people exert pressure for unnecessary demands To quote him, "We find non-compatibility between officials and non-officials not only with regard to Socio-economic traits, but also, we find marked differences in their attitudes and opinions, which sometimes are diametrically opposed It is also found that officials are generally more educated and younger in age while non officials are less educated and older in age

It is to be noted that two prominent figures in Panchayat samiti politics are the Pramukh and BDO Their relations either good or bad have a great impact on the relations between officials and non-officials The study of the author is not finding out solutions or reform Study reveals that the BDO (Block Development Officer) and the Pramukh come into conflict with each other at times in their private talks though good relations exist between them According to the BDO, the Pramukh interfers in his administrative jurisdiction unnecessarily The Pramukh thinks that the BDO, does not take him into confidence

The study reveals that in the relations among officials there is a feeling of specialists versus generalists. To quote Dr Pant, "This generate a sense of greater intraservice solidarity among the subject-matter specialists and generalists

It is a good study in a neglected field The real reforms will have to be brought out at the grass root level Panchayat Raj is the basic structure of Indian Federal Policy Unless the basic structure is changed, the changes can't be introduced at the National level. Moreover, India lay in the villages If we want to improve the Nation, we have to reconstruct villages. In the reconstruction of the village, the Panchayat Raj administration will have to play a dominant role. In this study the author is not finding out solutions or reform proposals for improving the officials and non-official relationships in the Panchayat Raj system.

K. Francis

YOJANA

Provides the overview and at a negligible cost

What goes on in India is a massive effort at planned economic development and engineered Social change. The people are in it at every level. When different viewpoints and even disparate data blur the view from below. You need an overview. YOJANA provides it fortnight after fortnight. When you are in thick of it Yojana takes you above, for a clearer view.

The cost is negligible. Eighty paise a fortnight, Rs 18 a year; Rs 30 for two years; Rs 42 for three years. Payable by Account Payee cheque or crossed postal order to

The Business Manager
Publications Division, Patiala House,
New Delhi-110001

Please enrol me as a YOJANA subscriber (English) for one year/two years/three years from.... . This is a new subscription/My old subscription number on the wrapper is I am sending Rs (Rupees) by cheque/crossed postal order No

Name (Block Letters)..

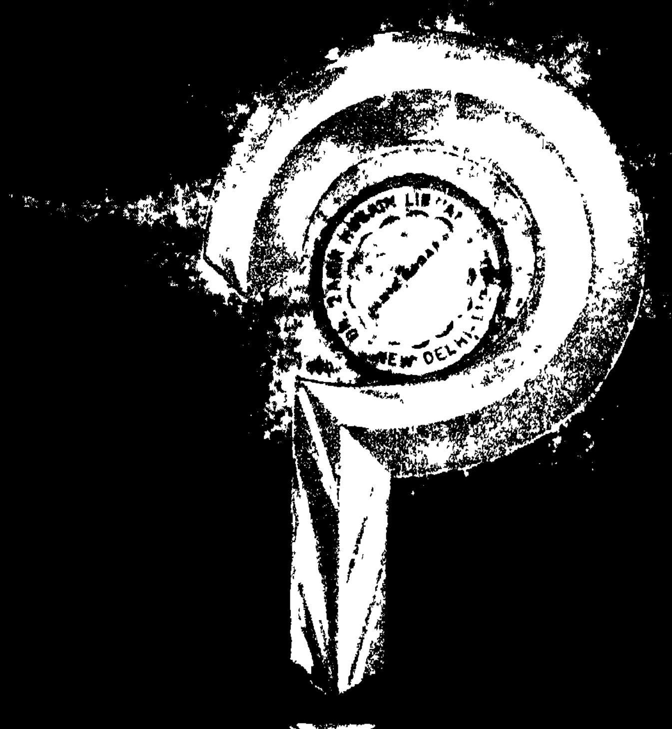
Address..

Printed by the Manager, Govt of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001

VOL XXIII/19 16 OCTOBER 1979

yojana

80 Paise



ENERGY CRISIS

is there a silver lining in the dark clouds ?

OUR ACHIEVEMENTS

Record Rice Output

SURPASSING all the previous records, the production of rice in Andhra Pradesh reached a mark of 73.01 lakh tonnes during 1978-79—a 13 per cent increase over the last record of 64.61 lakh tonnes achieved during the year 1975-76 Compared to 1977-78 the increase is 30 per cen'

The phenomenal increase is mainly attributed to the high yields of the kharif crop i e 53 15 lakh tonnes (a 41 per cent increase) compared to 37 73 lakh tonnes in the previous year The production during the rabi season also jumped up to 19.85 lakh tonnes—an increase of eight per cent.

All the coastal districts during the year shared this record rise in production But Telangana above all recorded a spectacular increase.

The area under rice production during this year also increased by seven per cent reaching 39 23 lakh hectares.

BHEL enters West-African Market

AMONGST the most of interna ionally reputed bidders BHEL has bagged a turnkey contract worth Rs 25 3 million from the Volta River Authority of Ghana It is the first export order for Reactive Power Compansation and a major break through in this field for BHEL to supply the equipment entirely engineered and manufactured by itself

Under this contract, BHEL will be responsible for complete design manufacture, erection and commissioning of equipments The system design for this project has already been completed by them.

Workers Welfare

THE Employees' State Insurance Scheme West Bengal provided cash benefits a medical care to 10,99,776 industrial work in the month of March 1979 Compensation was p to 14,143 injured workers to the tune Rs 21,42,744 73 The beneficiaries include 2,1 permanent disabled pensioners and 1,053 departme of deceased insured persons In March 9,209 ac dents were reported as against 4,824 cases report in the preceding month

In March 86,098 claims were received a Rs 50,89,507 28 disbursed on 75,313 claims in t preceding month. By way of maternity benef Rs 74 154 30 was paid to insured women workers

Tourist Traffic

THE international tourist traffic to India regi tered an increase of 5.4 per cent during t five months of 1979.

Foreign exchange earning from tourism for t first five months of 1979 amounted to Rs 131 2 cro as against Rs 124 5 crore during the correspondi period of last year

Rural Electrification Schem In Tripura

UNDER Rural Electrification Scheme, pura electrified 165 villages within a Indeed it is an achievement in the U Territory when compared to the electrification of 489 villages over a period of 30 years About 4 more villages are yet to be electrified. Considering constraints of funds and other handicaps, the Gov ment plan to implement the rural electrification sch in the territory phase by phase.

YOJANA

Volume XXIII Number 19

16 October 1979

24 Asvina 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910, 385481 (extensions 402 and 373) **Circulation:** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42 Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4,50 or $9.00 Three Year—£6.30 or $ 12.50 Single Copy—£0 12 or $ 0.25

Editorial

Buffer Stock, A Bulwork Against Famine

THE unprecedented drought, revaging many of the states in Northern Indian and blasting the hopes of millions of cultivators to sow kharif crops in their parched lands, is causing justifiable anxiety to the administrators and planners. The Ministry of Food and Agriculture has already launched a multi-pronged strategy to fight the baneful effects of drought on foodgrain production Measures to save whatever was left of the kharif and maximise the production of the ensuing rabi crop are welcome. That does not however mitigate the extent of the suffering of the people affected by the failure of monsoon this year.

According to the report of a committee set up by Uttar Pradesh Government to oversee the fight against drought, the situation is alarming. About 2,90,000 familes comprising 15 lakh people will have to be saved from death by starvation. Most of them own less than one hectare of land or are agricultural labourers belonging to poor and weaker sections. In the context of the present situation employment will have to be provided to them and in areas experiencing scarcity of water, cattle farms are to be organised on river banks and arrangements made for fodder and drinking water.

The basic problem is to provide employment to the people in the drought-striken areas where farming was not possible. They must earn enough to buy food Fortunately for the country the pattern of test relief work has also changed in view of the comfortable food stock position. To the credti of the planners, administrators, agricultural scientists and farmers, it must be admitted that they have succeeded in bringing about a green revolution and made the country self-sufficient. We have not to go about with a beggar's bowl or enter into PL-480 agreement which was of dubious value. What is more there is now a buffer-stock of about 22 million tonnes of foodgrains, which is available for distribution through public channel as well as for implementing employment guarantee scheme of the Maharashtrian type and Food for Work Programme. Following Maharashtra's example, employment guarantee scheme may be introduced in the drought affected areas. People needing employment can be given work which will create durable assets for the community. Payment may be made to them mostly in the form of foodgrain and a little cash. This employment guarantee scheme will supplement the existing food for work schemes which also should be geared to creation of capital assets in rural areas. To the extent money supply will be restricted because of payment in foodgrains, there will be a deflationary influence. Of course, there will be depletion of the buffer-stock by about 5 million tonnes. But this is insignificant when the severity of the drought is taken into account. Surely the buffer stock of foodgrains has become a major instrument for employment generation and creation of capital assets besides being a fountainhead to sustain the life of the

Energy Crisis

A Blessing in Disguise

Biman Sen

Executive Director International Educational Consortium and Visting Professor, Birla Institue of Technolagy and Science

AFTER failing to recover their lost land and to curve out a separate homeland for Palestinians through armed conflicts, Arabs started pondering over an alternative strategy to fulfil their objec ives. They soon found an answer and decided to use economic means to force industrially advanced countries to pressurise Israel to vacate Arab land forcefully occupied by them. Having virtually the monopoly of the nature's gift—the 'oil', the main source of energy, Arabs decided to use it as a lever to pressurise Western World to find out a just solution of the Arab—Israel conflicts.

In 1973, Arab oil producing countries along with Iran and other oil rich countries got together to raise the oil-price with pending threat to reduce production or put an embargo on oil export, if needed. It had no affect as no ready made solution was found to end Isreal's continuous occupation of Arab land. However, it acted just like the first taste of human blood by a tiger—which turns him into a man-eater. Since 1973, the oil producing countries (members of OPEC) have been raising the price of crude oil without taking into consideration the extreme sufferings of the newly developing non-oil producing countries. Between 1973 todate, the oil price have gone up more than ten times, making it impossible for developing world to sustain their minimum economic development required for saving their population from starvation.

The present action of the oil-producing countries amounts to black-mailing of the whole world. *In fact*, their action is holding the developing nations at ransom. Gradual increase of oil price to the present level is hurting more than developed countries, the poor developing countries which are trying to provide minimum amenities to their people, as it is nullifying all their developmental efforts so far put in. There is no doubt, the present action of the OPEC has put the economy of the industrially advanced countries in extreme difficult position, in respect of their economic growth rate, but those countries have enough resilience to stand the pressure and adjust themselves to meet the situation through mainly organised efforts—individually or jointly. What is the pity that the surplus wealth created by the OPEC countries through the price-hike is not being usefully utilised for the welfare of the human society at large or for any constructive purposes.

Where the world will stand, if like the oil producing countries, iron ore or coal producing countries start raising their prices in equal proportion or advanced countries like USA, Canada etc. which are the main supplier of food products, the key of life, decide to stop export of these essential commodities to the oil-producing countries or raise their prices to off-set the oil price hike ? Oil can be substituted by other energy sources, can food be substituted ?

Blessing in Disguise

Some time, a dark cloud has a silver lining. So the present man-made energy crisis created by the action of a few countries is a blessing in disguise It should be considered as an amber light—a warning prior to the real danger. One should not forget that one day, the fossil fuels like oil, coal, are also going to exhaust. What then, for human survival ? Some alternative renewable energy resources have to be found out. The present energy crisis through price-hike has advanced the action which might have been taken at a later date. It might have been too late and men would have suffered. The price hike of the

crude oil has created conditions for serious thinking to find not only alternative sources of energy on a high priority basis but also the substitutes for materials derived from natural resources which are exhaustible in course of time and possibilities of recycling these materials for further use.

Today search for new sources of energy and organic chemical feed stock for industry is an effort of utmost significance to all countries rich and poor.

Evolution of Energy Sources

Prior to discovery of 'Fire', man looked to the Sun as saviour and source of life, as it was the only supplier of energy needed by him in form of heat and light for his survival against the natural hazards. If man could be proud of any outstanding achievement, it is perhaps the discovery of Fire In fact, one may say, human culture and civilization began with fire—the man-made energy source—Evolution of various methods of producing energy sources could perhaps be considered as the story of evolution of human civilisation. In the beginning of the civilisation, the main source of fuel (energy source) was wood—which is still used as fuel in most of the countries. Gradually, man's search for new source of energy brought fossil fuels. Coal became the first fossil fuel to be used as a source of energy and it became the instrument of industrial revolution. With the discovery of oil, it became a strong competor to its sister-fossil fuel coal Gradually with the march of time, other sources of energy like hydel power, nuclear power started finding their ways and their establishing relative position in the usable energy source spectrum. To quote Dr Sam H. Schurr, in 1929, solid fuels supplied almost 80 per cent of the world's commercial energy and in 1960, solid fuel fraction declined to about half During the same period liquid fuel based energy became more than double. Biggest rise was registered by gas which went up from 4.5 per cent to 14 6 per cent in the total energy spectrum. The hydro-electric source went up by more than double—but remained unsignificant in the total energy spectrum. The reason for popularity of the liquid fuel was the low production cost and it could be transported conveniently and more cheaply than its counter-part solid fossil—coal. Not to speak of efficiency of the liquid fossil fuel Nuclear fuel came into the picture only in late 1950s The nuclear fuel has an advantage over others as it contains an enormous concertration of energy per unit of weight. One pound of nuclear fuel, if fully consumed can give the energy equivalent to about three million pounds of coal. There are many economic advantages of nuclear fuel, since it is a concentrated energy resources. In comparision to other fuels, it is known weightless and freight free. Thus it saves lot of capital and running expenses for its transport etc. However, there are inherent disadvantages of nuclear fuel, particularly its risk of polution and other hazards which may endanger human life and habitation. Moreover, its installation cost is very high and it needs highly concentrated market for power. (ref. Dr Schurr's—Technology and Economic Development) With the advancement of technology and rise in prices of other fuels, nuclear power plant will be cheaper and has many advantages—where concentrated power needs are there. Therefore, nuclear fuel, in the long run will be an important energy source. The importance of nuclear fuel, in the context of future energy need was forecast by Dr. Homi Bhaba and Maheswar Dayal as far back as in 1964, when, they predicted the shortage of conventional fossil fuel within a short time Moreover, the world resources of nuclear fuel reserves like uranium and thorium are far greater than the fossil fuel It may be possible within a decade or so to produce unlimited energy through chemical and fusion techniques.

Whatever may be the position, whether it is fossil fuel or nuclear fuel, since they are non-renewable and non recyclable, they are not exhaustible. Therefore, scientists and technologists are busy in searching for energy sources which are renewable and can be recycled. These energy sources can be broadly divided into four categories—namely solar energy, wind-energy, hydro-energy and energy from bio-mass i.e. energy from agricultural and forestry products and waste including human or animal wastes. Of the four categories, man has best control over the energy from bio-mass

Alternative Energy Sources

Major R and D investments throughout the scientifically sensitive countries are already on researches on solar energy and refinement of bio-mass to derive energy via biological routes. However, it may be desirable to examine various renewable and/or inexhaustible energy resources identified so far, that is, solar energy, wind and water power, and bio-gas and bio-mass conversion energy source—using agricultural and forest products and wastes etc.

(a) Solar Energy

'Sun'—is the unlimited source of energy and is inexhaustible, so long as solar system exists. The entire energy need of man could be met, if proper technology could be developed to trap and use only small

part of the solar energy falling on the earth. It is not difficult to collect solar energy but its storage for use as and when needed, is the main problem which the scientists and technologists are facing today. It has been possible for them to develop appropriate technique to harness solar energy for heating, air-conditioning, running of pumps for a short period or generating sparmodic electrical energy. It has been possible to develop solar batteries for limited use. Once, the scientists and technologists could solve the problem of storing solar energy at a reasonable cost, it would be possible to solve the major energy problem. Nothing is unachievable by man, one day he will be able to control solar energy to meet all the energy needs of the world.

India is one of the pioneers in utilisation of solar energy for cooking. During the prison days Dr. Rajendra Prasad with the assistance of one of his colleagues, Mr. Ghose, first designed solar cooker and experimented with cooking his food. There are other pioneers in the field like Dr. R. L. Dutta of Central Salt Research Institute. Today there are a number of centres in India where scientists and technologists are enegaged in solving the problem of harnessing solar energy to meet the future energy needs. In countries like USA, USSR etc, many scientists and technologists are engaged in researches in the field of utilisation of solar energy. The photovaltaic or solar cell is at present the principal power source of orbiting satellites. Millions of solar water heaters are being sold in Japan, Israel, Australia, USA etc. Efforts are being made to produce solar thermal power plants to produce electricity in commercial scale. The time is not far off when both the industrial and agricultural economies—will be able to use solar resources for their commercial energy—when fossil fuel may be redundent.

(b) **Wind Power :**

Use of wind power is not a novel idea. Many countries even during mediaeval times used wind power for sailing ships, lifting water from the wells and other agricultural activities. It has many limiting factors and may not be suitable for many topographical situation. Evene if proper technology could be developed use of wind power will be limited.

(c) **Hydro-Energy—Water Power :**

There are three ways in which water power is being used for producing electrical energy. The major use is through hydel project—that is harnessing of rivers for production of hydro-electricity. There is a great potentiality in India for using this energy source. Only a fraction of the hydel power has so far been used. Hydel projects are costly, highly capital intensive and require long gestation period The gestation period can be reduced by modification of technology. Hydel projects not only produces energy in a large quantity, but it also trains rivers and convert them from a source of sorrow to total happiness and it helps to improve agricultural products through continuous irrigation of land mass. However it has its own limitation, as it is dependent on vagaries of nature. It's power generation capacity is dependent on the state of reservoir, if the water storage falls, it affects the power generation, as it happened recently in Bombay and occasionally happen in Bhakra Nangal Hydro Projects. Inspite of its limitation, it will be worthwhile to exploit the hydro-electrical potential for power in a country like India which can ill afford to pay for fossil liquid fuel and use its coal reserve for power generation to meet country's energy requirement.

Besides Hydel power produced by harnessing rivers, electricity can be generated by using sea-waves and tidal variations. Many countries like Japan, France, USSR etc. are engaged in research on use of these potential energy sources. So far, scientists and technologists have been able to generate electricity in small scale by using sea waves and tidal variation The efforts are continuing specially in Japan to generate electricity by using sea-waves to supply power to a small town. At present its use is restricted to illuminate marker buoys in the port and harbour areas The advantage of this is that markers can be left unattended. Recently, in India, four engineers of Madras Port Trust have successfully designed an electrical generator which can generate electricity of about 36 Watt capacity to be used for lighting buoys of the harbours. This development has great significance for finding alternative energy sources. The time may not be far off when scientists and technologists will be able to exploit this unlimited source of energy to the best advantage of mankind.

(d) **Bio-gas and other bio-mass conversion techniques.**

Many of the world authorities are of the strong opinion that in future availability of chemical substances for consumer's use, health, food, liquid fuel and bio-energy etc. will be derived to a large extent from photo-synthetically produced bio-mass, based on bio-conversion techniques. Agricultural and forest products and wastes, human and animal wastes will be the major sources of energy.

The idea of using bio-gas generated from human, animal, agricultural and forest wastes was mooted even before the world war II but recently it has gained popularity. Experiments are being carried out in many parts of the world to make the best use of bio-gas—not only for heating and as domestic fuel but for other purposes. In India, Ramakrishna Mission conceived of using gobar gas plant for domestic uses before the world war II. Now it is gaining popularity in rural India.

As regard bio-mass conversion methods large number of countries are involved in research in this field Many research centres have been established during the last few years to find out the cheapest method of producing commercial energy fuel. There are a few centres in India engaged in research in this area, one of which is the Indian Institute of Technology, Delhi The I.I.T. Delhi, in collaboration with the Swiss Federal Institute of Technology, Zurech, has developed a well organised centre for bio-mass conversion technique to produce liquid fuel. The research workers in this centre are using agricultural waste like bagasse, rich straw, rice husk etc. to produce ethanol—which may soon replace petrol for running car The centre has also established close collaboration with well known research laboratories in France, Australia and Germany in the field of bio-conversion technology. Soon some Research Institutions of USA may join. Experiments on use of ethanol as a substitute for fossil liquid fuel are being carried on in various countries like Brazil, Italy, India etc. Attempts are also being made to produce alchohal from molasses to gradually replace petrol.

There is immense possibility for developing liquid fuel on commercial scale from agricultural and forest products. In Japan, Scientists are carrying on experiments for producing alternative fuel to replace fossil liquid fuel from eucalyptus trees and other plants.

Days are not far away, when it would be possible for scientists and technologists to replace completely commercial use of fossil fuel, by renewable energy sources.

Futuristic Outlook

Dr. Amory Lovens, the famous energy planner and an energy consultant to President Carter has suggested that the United States like many other nations has a choice between two highly different types of energy systems for 21st century and the choice will affect what kind of society and earth mankind will have (Span—August, 1979). The choice is between "hard path"—production of electricity in centrally run power plants using depletable and potentially dangerous fuels—oil, gas, coal, uranium, and the "Soft Path"—using renewable energy sources—such as sunlight, wind, agricultural and forest products. The choice will obviously be determined by the work to be done and economics of generation of power.

Perhaps it may be desirable, at least during the transition period to develop a well balanced integrated system of energy resources than to attempt any single selected system. Mixing of various energy-resources should be conditioned according to the purpose for which energy is needed. Ultimately however, fossil fuels as energy resource may have to be replaced by a proper mix of nuclear power, solar power, wind power, and energy derived from agricultural and forest products and wastes. Eventually energy for heating and air conditioning minor irrigation works may be derived from solar energy, electricity for commercial use may be generated from hydro-cum-sea waves or tidal variation or even wind power. cars may be run by liquid fuel obtained from farm and forestry products and wastes, and the fuel for cooking from bio-gas. Other domestic consumer goods like plastics etc. which are at present derived from petro-chemicals may be obtained from agricultural products or forest products. The advantages of these sources are firstly either they are inexhaustible or are renewable. A country using these resources will not depend on others for raw materials setting itself free from black-mailing. So every country could be self-reliant. However, their success will depend on their capacity to develop proper type of human resources capable of exploiting the abundant gift of nature.

Impact of New Renewable Energy Sources

In the ultimate analysis, one may foresee that the world will have to, by force of circumstances, use the "soft path", as defined by Dr. Amoryhovins, which would rely on clean and renewable energy such as sunlight, agricultural and forest products and wastes etc. the kind of society and earth mankind will have in the 21st Century and thereafter, can be projected. The society will have to be highly urbanised and mankind will have to adopt again "city civilization". In the beginning of the human civilisation, the man adopted "city civilisation" to protect himself—from the danger and hazard of living—but in the 21st century and thereafter, he will have to adopt city civilisation to protect nature from his destructive habits.

(Contd. on page 24)

* * *

OUR NEXT ISSUE

* WITHER CHILDREN'S BOOKS
  by Yamuna Shankar
* CHILD WELFARE AND DEVELOPMENT IN INDIA
  by B. Chatterjee & Anupama Rao
* NEW STRATEGY IN CHILD EDUCATION
  by V. S. Mathur

WITH LIVELY ILLUSTRATIONS

ANNUAL PLAN 1979-80

Stress on Rural Sector

16 Per cent Increase in Developmental Outlays

THE Plan for 1979-80 envisages an outlay of Rs. 12,601 crore in the public sector as compared to the Plan outlay of Rs 11,650 crore for 1978-79. The maintenance expenditure of Fifth Plan schemes, which were completed by the end of 1978-79, has been treated as non-Plan for 1979-80 onwards, and is estimated at Rs. 805 crore. Taking this into account the total development outlay for 1979-80 compared to the Plan outlay for 1978-79 represents an increase of 16 per cent. These increases are mainly in agriculture and allied service, irrigation and flood control and power sectors.

Rural Oriented

The Annual Plan gives considerable importance to the Revised Minimum Needs Programmes and rural development. The aggregate outlay for RMNP for the States and Union territories for 1979-80 is Rs. 531 28 crore. This includes outlay for rural electrification, rural roads, elementary education, adult education, rural health, rural water supply, housing for rural landless labour, environmental improvement of urban slums and nutritional programmes.

The estimated outlay for rural development in the Annual Plan is of the order of Rs. 5,003.41 crore This comes to 40.13 per cent of the total Plan outlay of Rs. 12,467.63 crore.

Employment Strategy

The employment strategy of the current Five Year Plan involves adoption of employment-intensive sectoral planning, regulation of technological change to protect and enhance employment and promotion of area planning for full employment. Several schemes with high employment potential have been initiated during the Sixth Plan periods 1978-79 and 1979-80.

An integrated rural development programme aimed at providing full employment was initiated in 2,000 blocks, already covered by some of the rural development programmes and 300 new blocks were selected for coverage in 1978-79 An additional 300 blocks are being taken up in 1979-80. The distribution of one million metric tonnes of foodgrains in 1978-79 for the Food for Work programme provided 400 million man-days of work. In the current year it is proposed to utilise 1.5 million tonnes of foodgrains providing 600 million man-days of work.

The generation of employment as a result of creation of additional irrigation facilities is estimated to be of the order of 0 38 million person years in 1978-79 and a further 0.35 million person years in 1979-80.

Other major schemes which are generating considerable amount of employment opportunities include Small Farmers Development Agency Programme, Drought Prone Areas Programme, Operation Flood for Dairy Farming, Agricultural Extension and Training Programmes, District Industrial Centres, expansion of handloom, khadi and village industries, Margin and Seed Money Scheme for encouragement of self employment, National Adult Education Programme, Community Health Workers' Scheme, Maharashtra Employment Guarantee Scheme, Stipendiary Employment Scheme for Graduates and Diploma Holders in Karnataka, Special Employment Programmes in Andhra Pradesh, Jammu and Kashmir and Punjab, and the additional Employment Programme in West Bengal. The assistance provided by commercial banks for encouraging self employment and the help extended by

the Small Industry Development Organisation are also resulting in the creation of substantial employment opportunities.

Agriculture Sector

The total public sector outlay for agriculture and allied sectors and cooperation for 1979-80 is Rs. 1815.22 crore as compared to Rs. 1745.16 crore in 1978-79. Sufficient funds have also been provided to promote irrigation and command area development and flood control.

The Plan document indicates that the on-going research activities of the existing agricultural institutions and coordinated projects would be further strengthened by providing full support for infrastructure development and extended support to the agricultural universities to maintain the tempo of research and education activities. Operational research programmes could be given priority to establish and demonstrate the field worthiness of economic viability of new technologies through "Lab-to-Land" programme.

Power generation in the country went up from about 99 billion units in 1977-78 to over 109 billion units in 1978-79, making an increase of about 12.5 per cent. New generation capacity of about 1.5 million kw was commissioned during 1978-79. It is expected that the installed generation capacity will be augmented by 2.8 kw during 1979-80, taking the aggregate capacity to 31.8 million kw my the end of the year. The target for rural electrification in the Annual plan has been set as 25,000 new villages and four lakh pump sets. In the petroleum sector the total Plan outlay for exploration, production, refining and marketing is Rs 580.23 crore.

Small Industries

The outlay for the village and small industries sector in 1979-80 was to the tune of Rs. 289.48 crore, as compared to the outlay of Rs. 234.45 crore in 1978-79. Some additional funds for the development of these industries would also be made available under the programmes for the hills and tribal areas.

In making provisions for 1979-80 in village and small industries sector, committed expenditure to the tune of Rs. 3.81 crore in the Central Plan and Rs. 9 80 crore in the States' and Union territories' Plans has been transferred to non-Plan budget. Taking into account the committed expenditure, the actual step-up in the outlay for Annual Plan 1979-80 over the level of 1978-79 is 31 per cent.

The Plan for 1979-80 provides an outlay of Rs. 2405.81 crore for large industries and minerals in the Central sector and Rs. 141.29 crore for States and Union territories. About 70 per cent of the outlay provided in the Central Plan is for iron and steel, petroleum, fertilizers and coal.

In the large industries sector adequate provision has been made in the Annual Plan for on-going projects so that these are completed expeditiously and returns accrued on the investments already made. The allocation for the new starts has been made selectively in certain critical areas like fertilisers and cement which are essential for the economy.

For the transport and communications sector, a total outlay of Rs. 2135.61 crore has been made as compared to the outlay of Rs. 1794.23 crore in 1978-79 The outlay for the railways has been stepped up from Rs. 535 30 crore to Rs. 650 crore, for shipping from Rs. 98.72 to Rs. 164.73 crore; for civil air transport from Rs 82.50 to Rs. 142.26 crore; and for communications from Rs. 355.10 crore to Rs. 411.09 crore.

The Annual Plan for 1979-80 makes a provision of Rs. 130.27 crore for urban development programme and Rs. 205.19 crore for various housing schemes. Regarding water supply and sanitation the Plan makes an outlay of Rs. 429.52 crore in 1979-80, as compared to Rs. 326.68 crore in 1978-79.

In the science and technology sector the total Plan outlay for 1979-80 is to the tune of Rs. 242 38 crore, as compared to Rs. 223.56 crore in 1978-79. The non-Plan expenditure in the same sector is estimated to be Rs. 208.26 crore as compared to Rs. 156 71 crore in 1978-79.

In the field of education the total outlay of Rs. 273.77 crore has been made for 1979-80. The National Adult Education Programme is expected to take care of about 45 lakh additional illiterate adults during the year. □

An Overview of Post-Harvest Strategy

B. K Verma
Director, Indian Grain Storage Institute, Hapur (U P.)

CAN we produce 1640 lakh tonnes of foodgrains in 1985? Yes. A breakthrough has been achieved in the science of cultivation and it is evident from the increase in production year after year : in 1976-77, 1210 lakh tonnes, in 1979, 1260 lakh tonnes. If the present trend is any indication of future prospects, the target of 1640 lakh tonnes by 1985 is not unachievable. If so, the problem of storage of foodgrains by the farmers in the villages cannot be viewed in lighter vein. The grains are stored primarily for consumption, as seed and animal feed, food for work besides sale at an opportunate time, when the prices are favourable The latter is a part of the marketable surplus of about 20—40 per cent of the total production which is retained by 48—90 per cent of the farmers depending upon their production capacity for future disposal In view of the bulk of the grain being stored by the primary producers, the problem is actually felt at the village level although other agencies, such as, wholesale and retail merchants, Food Corporation, Central and State Warehouses, Cooperative Societies and last but not least the consumers also face it in varying degrees. While public agencies have modernised storages, others have first to improve their structures and follow scientific practices for maintenance of stock without deterioration in either quantity or quality.

Need for Improved Storage Structures

From various accounts, it is evident that there is a loss in weight of the order of 10 per cent from the time crop is harvested and stored, the major loss being during the storage period because of faulty structures, attack of storage pests, fungi and rats. The cleanliness and moisture content of the grains not to talk of the receptacles, room and godown in which they are stored are also considered very important factors from the point of view of loss. The quantitative and qualitative losses that occur after harvest through the stages of threshing, winnowing, drying, transport, storage, processing and packaging are well known but the prevention of losses during storage is a necessary part of post-harvest technology and needs consideration on a priority basis Therefore as a quick measure to provide protection to foodgrains, there cannot be any better solution than to provide improved storage structures to producers, traders and consumers who store foodgrains from a few months upto a year.

Traditional Structures

At farm level, the storage is still primitive in mud, bambo, paddy straw, reed, wood and stone structures made from the raw materials avialable at the place of construction They serve as some kind of container but do not necessarily keep the grain in safe and sound condition. The merits of the conventional type of receptacles are their low cost of construction and maintenance, can be made from locally available raw materials, do not require imported expertize and have flexibility of capacity. The demerits are very many and of serious nature. The traditional structures are neither moisture proof nor rat-proof They cannot be used for fumigation in the event of insect attack. There is the hazard of fire and pilferage Capacity of these structures is not much.

The farmers by and large store from one to five tonnes of foodgrains, depending upon their production and holding capacity, for a period of less than a year and it is at this level that the traditional techniques need major changes A field survey carried out by the IGSI, Hapur in selected areas of U.P., Punjab, A.P. and Maharashtra indicated that all farmers stored foodgrains for their own consumption ; 64 to 96 per cent for seed , and 48 to 90 per cent for future sale. The quantity stored for the above purposes varied from 21.8 per cent to 71 0 per cent of the total production. From this it is clear that the level of farm storage is very large compared to both the trade and public storage. The existing storage facilities, being unfit for scientific storage of food grains require to be replaced by modern structures or need to be improved upon to conform to an ideal structure. The importance of traditional storage techniques cannot be minimized looking at the limitations of farmers to acquire and use modern techniques.

Indian Grain Storage Institute

Efforts are consistently being made by different organizations, Government and Semi-government to deve-

lop, design and fabricate storage structures suitable for storing different kinds of foodgrains according to the climatic conditions of the area and the Indian Grain Storage Institute has to some extent succeded in achieving this objective. The IGSI Hapur, UP, which is the pioneer R&D organisation in the country has 36 desings to its credit which can be offered for use in different rural areas besides designing improvement in 12 conventional type of structures popular all over the country. Agricultural Universities and Central and State Research Institutes are also working in this direction to provide further technological development in the existing storage structures using locally available raw materials and skill.

Storage facilities should be developed at three levels, viz. farm, village and urban level. Farm level storage can be supplemented by village level storage, an intermediate level, before the produce is lifted to meet the requirement of the urban population. A urban level storage facilities are provided by public agencies such as FCI, CWC and SWC etc. While the farm level storage is primitive, the village level storage is still in its nfancy in the country. There is need for medium sized godowns where produce of a few villages could be tored. These can service as transit storage places before he foodgrains move to the cities. Flat bulk storage godowns of 100 to 200 tonnes capacity can be considered as the most appropriate transit storage places etween the farm level and urban level storages. This hould also help to diffuse pressure on the urban level orage during harvest time and save grain loss The rban level storage in godowns for bag storage and ertical steel or RCC silo for bulk storage and suitable ut the latter has very limited application owing to its ost and requirement of energy for operation. Silos fan ore grain for 2 to 5 years or longer with due care but eir utility for storing foodgrains is mainly at the ports eant for export or receiving it after import or to hold e buffer stock for indefinite period. They have extra lvantage from the point of view of losses which is inimal as compared with bag storage However, lack bulk transport facilities, traditional handling and arketing methods make the use of silos in large numrs un-suitable under the present day conditions in e country.

Cost Benefit Ratio

The selection of the type of storages at various levels fers from lack of economics. The cost benefit ratio storage is not yet fully known for different structures t it is certain that the capital cost for storage facilities foodgrains increases progressively from traditional storage at the farm level to bag storage structures and to bulk flat storage or silos. Since the major part of production is stored at farm level where the losses are also maximum that the Government has planned to provide metal storage bins to the farmers and technical know-how for the construction of pucca Kothi or effecting improvements in the existing conventional structures with an immediate twin objective of checking the losses and making the farmer gain financially

Save Grain Campaign

The Save Grain Campaign scheme of the Department of Food of the Government of India aims at dealing with the problem of storage at the grass root level. The objective is to educate, motivate and persuade the farmers and others to store foodgrains without losses. This is achieved by organising regular training programmes, demonstration of control of pests, improving existing storage structures, supply of improved storage bins, mass publicity and through legislation Their bin programme provides metal bins for storage of foodgrains at farm level. These bins are being fabricated by State Agro Industries Corporation and other agencies and given to the farmers at subsidized rates or on deferred payment basis. Efforts are also being made to promote construction of Pucca Kothi by providing inlets and outlets and polythene sheet free and modernising old storage structures. About two lakh bins have been sold to the farmers under this scheme but more than this is the demonstration and training given to the farmers on scientific storage techniques and control of storage pests. The crux of this programme is not to sell improved structures to all the 92 million farming families (owner and tenant cultivators) of the country but to ntroduce an appropriate technology for adoption by the farmers themselves. The existing storage structures and practices developed over the years by the local genius from the available raw materials cannot be by passed since they are within the financial resources and comprehension of the farmers and with slight modifications are capable of reducing losses to a substantial degree. The strategy of the Save Grain Campaign teams and the research and development programmes of the Indian Grain Storage Institute is to intergrate improvements with scientific nexus rather than total replacement of accepted technology which only is going to make an impact on storage losses.

Linked with storage is the technology for the control of insect pests, rodents, mites and moulds that are responsible for deterioration in quality of the produce Storage technology is a part of the post-harvest system and as such requires to be considered alongwith the

preservation techniques and not in isolation even though it is a major one. In this context the development of an effective and economic techniques that are safe, cheap and suitable in the control of pests and moulds deserves emphasis even if they are less sophisticated. However, the use of sophisticated techniques cannot be barred in the modern scientific age provided their suitability (in technical, social and economic terms) is established and know how is transferred to the farmers through a competently established agency on a continued basis. The extension service to render package of post-harvest technology is an essential part of the technological development. Extension agency should be a multiple service unit at the farm level and instead of being manned by specialists should rather have generalist on its staff who should be able to assist the farmers in all his farm activities, upgrade his skill, improve productivity and minimize wastage This kind of service needs to be strengthened. The employment of mobile exhibition units which would help transfer of modern agriculture technology, particularly storage and preservation of foodgrains in which the Indian farmer is lagging behind seems to be an inevitable necessity.

The need for quality control and linking the pricing policy with quality of the produce is another step to promote quality production and sale. There is also need for creating rural financing institutions to finance subsistence farmers, especially for adoption of appropriate technology of storage and other post-harvest operations. The other infrastructural requirements are credit facilities and transport and marketing facilities which are required to be created to make the farm produce more remunerative. In the long run such facilities will fend the farmers economical and social uplift thus making the country more prosperous.

A meaningful contribution in the upgrading of post-harvest technology can be made by institutional arrangements. Strengthening of existing national institutes dealing with the subject and establishment of a Central Institute of Food Storage and Processing to develop capabilities of combining agriculture with industry into a profitable preposition can be considered. Projects dovetailing agriculture with industry which have the potentiality of engaging indigenous skill and using local resources are bound to augment rural income contributing to sustained growth. [ ]

Social Cost-Benefit Analysis and Irrigation Projects

E. Narayanan Nair
Asstt Professor
School of Planning,
Ahmedabad.

DURING the last 30 years of Indian Planning our Planning Authorities at various levels have undertaken numerous development projects. In agricultural sector, Irrigation Projects had dominated in the past and even in the future this will be so. The Central Irrigation Department with its heirarchical organtsaional set up at state level undertake various irrigation projects. Here we like to pose few methodological issues in the project evaluation procedure being practised by the Governmental Organisations especially for these irrigation Projects.

In the decision analysis of development projects, economic evaluation, defined as a detailed Social Cost Benefit Analysis, is being increasingly advocated by not only national planning authorities but also by international agencies. Conceptually this analysis is different from the cost benefit analysis generally being employed in the private investment planning generally known as Discounted Cash Flow Analysis.

Methodologically project evaluation by Social Cost Benefit Analysis consists of valuing these inputs and outputs, taking the time dimension into account, in a manner that accurately reflects their social values. Since market imperfections and structural imbalances render market price in Land Development Costs (LDC) an inadequate index of the social values of resources and outputs, project evaluation requires the use of "shadow" or "accounting" prices at which inputs and outputs are to be valued. These shadow prices are developed by applying corrections to market prices.

The specificity of a particular method of project evaluation then consists in the specific method used to derive these shadow prices from given market prices and clearly identified imperfections. Since the net annual benefits calculated is mainly determined by the "Discounting" process, the literature on Social Cost Benefit Analysis mainly revolves around determining reliable "Social Discount Rates". Even though we have the reservation on the relevance of this Neo-classical concept to LDCs, where a high incidence of income disparity is prevailing ; which will question of rationality of the "Compenation principle" and "Paretto-optimality", we will limit in this context to state the shallowness of the current practice of evaluation in irrigation projects.

The present practice of irrigation project evaluation generally is revolved around few sets of informations. The PWD (irrigation) department with assistance from the State Agronomist calculate a "normative cropping pattern" of the Command Area by taking the soil conditions, soil irrigability under provision of adequate water for irrigation. The analysis may estimate an expected crop value, and in certain situations the respective yield from "water pricing", it will also add in the benefit side the Compensation Levy from the development of culturable waste land. At the cost side the analysis takes the Sunk capital and annual maintenance cost. The study generally accepts a discount rate of 12 per cent (This is nothing but the opportunity cost of bank investment) and respective net annual benefits will be discounted and thus will derive the B : C ratio. The decision on the project viability is usually made on this ratio.

The basic issue is whether this practice of "resources pricing" is valid in LDCs especially for public investments like Irrigation Project.

The basic issue is that in the project evaluation the net benefit worth should be calculated not merely from the direct benefit angle but also from the broader social angle too, especially since the planning objectives and priorities are being formulated from this Social angle. The latter only will provide a total framework for the project evaluation. In practice however only very few projects so far had been assessed within this framework. The constraints are not merely the lack of a methodology but also at the stage of project formulation Some of them are related to the lack of definite technical alternatives being considered at the stage of design, lack of a comprehensive framework for project formulation in accordance with the broader planning objectives and priorities, the tendency to rely on the random calculation of net benefit and a clear lack of interaction of the Irrigation Department with other departments and institutions for assessing the multi-dimensional impact of the project which is particularly crucial in Agricultural projects. Besides, the lack of a systematic assessment of the socio-economic situation of the project area also adds up to an unrealistic project assessment. Even though many examples can be quoted from various studies the example of Idduki Hydel Project is one of interesting showing the after-effect of the narrow perspective taken by the Kerala Electricity Board resulting in the lag of its Irrigation projects and the project's Socio-economic impacts.

The basic issue is that in a country like ours where a high incidence of unemployment is prevailing, projects should be conceived and formulated not merely by taking the direct benefits in terms of farm economy but also the criteria of labour utilisation should be incorporated in the formulation of project technical alternatives.

A realistic evaluation of the envisaged benefits and costs can only be done if the real target groups of the projects are identified, usually farmers are identified as the direct target groups, but the labour utilisation through a proper technical alterntive will also create a different set of direct target group, besides the second order effect of labour utilisation due to the changes in the consumption pattern of the region A Social Discount Rate aimed at accounting these direct social benefits and costs should be calculated on the basis of different target groups identified.

This can be done only if a Socio-economic Study is done similar to an Irrigation Bench-Mark Survey, in the project area to identify the proper planning groups so that expected benefits and costs can be captured more realistically. A study of this nature conducted as a fore-runner to the actual project evaluation assessment will be helpful in assessing the local situations in its various aspects like agricultural production, labour utilisation and its related "labour-pricing", the envisaged changes in the cropping pattern by understanding the attitudes of farmers towards new agricultural technology, the local requirements for designing a better water management system and the environmental implications, etc ;. If these aspects are studied before making a cost-benefit study, many of the tangible and intangible social benefits and costs can be incorporated in the project evaluation.

Moreover, it will be a positive step to organize these projects through a Development Authority and depending upon the nature of work the Authority can constitute members from Irrigation Department, Electricity Board, District Development Officers who can look into the various aspects of the project for a realistic project formulation, evaluation and its timely and comprehensive implementation.

Rural Reconstruction Corporation

M. S. Sandilya
*Member of Faculty, Administrative Staff College of India
Hyderabad*

INDIA cannot boast of any significant development unless there is a sea-change in the living standards of her people residing mostly in rural areas. Majority of this population lives below the poverty line and does not have access to food, clothing and shelter, the basic necessities of life. Even drinking water is at a premium and if the monsoon fails one can very well imagine the plight of these people. The causes that impede village transformation are plenty. Land ownership, class structure, economic exploitation, political developments, caste factors and vested interests are some of the more important causes.

Experiences indicate that rather than outright charity, it is always better if the receiver is made to work for the benefits. This instils in him a sense of ownership and he will be able to face future hurdles effectively. Therefore instead of providing food and other necessities in the form of gifts or subsidies, it will be advantageous if the people are made to work for it. With the labour thus obtained, assets such as roads, schools, water supply schemes, embankments and drainage works can be created In-turn, better communication, education, irrigation, sanitation and living conditions will be provided to the people. A direct result will be the improvement in employment opportunities and the skills of the villagers. With an assurance of the basic amenities and improvement in education and communication facilities the village blacksmith, potter and weaver will have brighter chances of getting a fair price for their skills and will be motivated to improve them. A general uplift in skills will then result in an increase in earnings from better employment opportunities, thus improving the living standards. Thus, a general improvement in the living conditions can be expected with a high degree of probability.

Panchayat-Raj Schemes

"Panchayat Raj Institutions" were to usher in these developments, provide the foundation for the consolidation in villages and bring in 'Ram Rajya'. Unfortunately the socio-political environment has not spared this institution. The initial enthusiasm for the Panchayat Raj proposals as suggested by the Balwant Rai Mehta Committee, lasted till about the early sixties. After this, there had been a marked decline in the interest. Once again in 1977 Panchayat Raj has been revived with the introduction of Antyodaya Scheme in the northern states like Rajasthan.

The report of the Ashok Mehta Committee submitted in August, 1978 will obviously form the basis for the implementation of village reconstruction projects.

It is useful to look into the administrative structure of the Panchayat Raj institutions. The Balwant Rai Mehta report recommended a 3-tier system. Most of the States adopted this proposal with minor variations. The Andhra Model consists of Panchayats at the village level, Panchayat Samathis at the Block level and the Zilla Parishads at the District level. Of these three institutions, the Panchayat Samathis at the Block level form the core development units. Maharashtra and Gujarat, both followed a similar pattern but have vested more powers at the Zilla Parishad level. In addition, there are some administrative differences. In the Andhra model there is a separate engineering division to provide the basic necessities under the Panchayati Raj schemes. In the Maharashtra model, the technical staff come under the Officer-In-Charge of the Zilla Parishad. A few States like Haryana, Jammu and Kashmir and Kerala do not have Zilla Parishads; while Tamil Nadu and Kerala have the District Development Councils instead of the Zilla Parishads. It can be taken that broadly a 3-tier system is being followed throughout the country.

The Ashok Mehta Committee has, however, suggested a 2-tier system. A mandal Panchayat catering to the needs of a group of villages with a total population of around 20,000 has been suggested. The

15 DPD/79—4

for the economic viability of the Panchayat. In this scheme, villages will be grouped into viable units; the gram panchayats becoming advisory bodies. The Zilla Parishad/District Development Council will be there but the development of resources will be based on the decisions of the Mandals. It is pertinent to note here that the Chief Ministers have strong reservations about 2-tier system.

Manipulations of the Panchayat Raj institutions by political parties is a well-known fact. Since India became independent in 1947, political parties have been trying their best to woo the rural voter as he constitutes 80 per cent of the population. However, this has not been done by any logical reasoning; rather it has been accomplished by pandering. The local big landlord is still the leader in many a village, and his writ holds. The era of one party dominance perpetuated by the Indian National Congress since 1947 did not necessarily result in monolythic political formation in villages. Invariably most of them had two groups, one ruling and the other opposition; political labels being mere surrogates.

Objectives

The objective of the Panchayat Raj depatment is to provide the basic necessities to the villagers. In rural terms this consists of roads, drinking water Public health schemes, minor irrigation projects and schools. Obviously, a technical department is required if this goal is to be achieved. Unfortunately the functioning of this technical department has always been subjected to pressures from various quarters. Naturally the performance has been anything but mediocre. Political and administrative considerations have always influenced the functioning of this department.

Theoretically, a panchayat institution, namely a panchayat samithi/zillla parishad, has to take a decision on projects to be implemented, based on needs and forward it to the department for implementation. The administrative sanction is vested with the head of the Zilla parishad|collector. Political equations play an important role in the official sanction of the projects. Invariably, if the local MLA/MP belongs to the ruling party he wields much more influence than the others. Hence, villages which can boast of such connections get priority in sanctions irrespective of their real requirements.

Organization

The technical department is usually under th control of a Superintending Engineer for a group (districts. Under him there are executive engineers t look after districts. Executive Engineers are assisted by Assistant Engineers and Supervisors. Executive Engineers from the king-pin in implementing the projects. They may be compared to a colonel on the battle field. It may be worthwhile to note here that in Maharashtra this technical department is directly under the District Collector|Zilla Parishad head.

In reality, the 'de-facto controller' of the various Executive Engineers is the respective District Collector. The Collector can sanction , stop or defer projects. He calls for meetings and discussions It has come to pass that an Executive Engineer has to spend at least 20 days in a month attending meetings where he does nothing but "stand and wait". In addition, the Executive Engineers chaperon ministers/secretaries and other dignitariess during their visits

Since Independence, political parties have been trying their best to woo the rural voter as he constitutes 80 per cent of the population.

This dual control has been one of the major impediments to the proper functioning of the Panchayati Raj departments. A technical decision is invariably over-ridden by an administrative/political decision. Thus, the Executive Engineer is anything but motivated to achieve the objectives of the department. Being analytically inclined, he clearly sees the functioning of the system and reacts by trying to beat the system at its own game. This may be one of the reasons for a majority of such engineers becoming corrupt and the root cause for the slur that is cast on the Civil Engineering profession.

Problems exist even at the operating level. The supervisors are technically under the engineers but invariably they are posted in Zilla Parishad offices. They come under the control of the Block Development Officers. They spend most of their time in bill and revenue collections, and have no time for measuring, collecting information on requirements, drawing up plans and implementing the projects. To his dismay the Executive Engineer finds that the Supervisor would rather report to the whims of a Block Development Officer than himself. Perhaps, this is a manifestation at the lower level of the Executive Engineer preferring to report to the District Collector rather than to his Superintending Engineer.

The decision making in implementing the rural projects is quite involved because of the socio-political constraints discussed earlier. Coming to the brass-tacks the engineer will have to survey, plan, draw, locate a contractor, supervise, measure and certify the works completed for payment. Two types of problems are omnipresent in these situations: (i) money being spent before the close of an accounting period and (ii) job being taken up with inadequate grants—with the expectation of future grants—remaining incomplete due to lack of grants and hence being wasted.

Such, a state of art can be construed as a 'lack of objective'. Where the objective should be "to provide the basic amenities to the villagers", the objective is "to spend a certain allocation of funds" or "to sanction projects based on extraneous pressures and so on. The result is doubly negative . areas that require a project starve for it and meagre resources are wasted elsewhere thus causing a further delay in implementing pojects where they are needed.

The electricity boards are but extended limbs of government machinery which function according to bureaucratic norms. In a dynamic situation wherein modern management principles have to be applied, such boards are too lethargic to function effectively.

New Approach

In order to break out of this vicious cycle, an option open is to have an entirely different type of organization geared to meet the objectives. Such approaches are not uncommon. For instance "Rural Electrification Corporation' has been established to provide power supply to villages. State transport undertakings have been constituted into corporations to cater to the needs of a few districts. Similarly a rural development corporation, either at the State level or at the district level, can be created to provide the basic amenities in the villages.

The example of the various transport corporations in Tamilandu is very relevant here. The objective of these corporations is to open communication channels to the interiors. They are viable units and the surplus they generate from the profitable routes is utilised to run the unprofitable routes. To motivate the operating staff they have introduced an incentive system based on collections. The profitability of these corporations indicate that such organisations can be viable. Some may caution that these were originally profit making private corporations. But it should be noted that while the private operators were interested only in the money making routes and neglected the non-profitable routes these state-owned corporations have been able to plough the profits to improve the communication facilities in the non-profitable areas.

The performance of the "Rural Electrification Corporation" does not present such a rosy picture. This could be attributed to the fact that it tries to meet the objective of rural electrification through the various Electricity Boards as the implementing agencies. It functions basically as a financing organisation and is not involved in the implementation of the projects. Thus the surrogate objective of financing electricity boards for rural electrification takes precedence over the real objective of providing rural electrification Moreover, the electricity boards are but extended limbs of government machinery which function according to bureaucratic norms. In a dynamic situation, wherein modern management principles have to be applied, such boards are too lethargic to function effectively.

Another pertinent example is the interest being evinced in the creation of "District Industries Centres". Though the "lead bank" scheme was to usher in village reconstruction with inflow of funds, yet the lack of facilities to spend it properly has been a dampner to the scheme. Now the DIC's are being envisaged to fill in this lacuna but they are yet to take off the ground. On the other hand privately managed industrial estates including cooperatives have performed much better.

If may be concluded from this state of art that a "Rural Development Corporation" can be expected to deliver the goods provided it has the necessary and sufficient support. It should be an undertaking that thinks like an entrepreneur. The corporation should have "providing the basic necessities such as water communication channels and schools to the villages" as its objective It should obtain its financial backing from the government and be free enough to develop its own resources and way of action. Obviously it will have the policy guidelines of the government as a broad framework of reference. At the same time the independent status will give it a flexibility to move with the modern times. A word of caution is that unless such a corporation is organised based on its functional requirements, it is likely to become another white-elephant that adds to the miseries of the tax payer.

Functionally, the corporation has to collect the information on the requirements, plan on the basis of the information gathered and implement the plans to completion. Scientific management methods like PERT/CPM can be used to advantage. The problems encountered during implementation will be fed back through the information process so that planning takes care of future contingencies and modify the plans accordingly. A precaution that is very relevant is that such a corporation should not become a dump-house for unwanted bureaucrats. Ideally it should be managed by technocrats and professionals.

The information collection should be organised on a scientific basis, to enable the decision-maker take positive decisions. Primarily, a basis will have to be established for fixing up priorities as to which village needs help first, in which village can it be deferred and so on. Data regarding the availability of water, roads and other amenities will have to be gathered. A geological survey will be required to locate the sources, understand the terrain and thereby plan the requirements. Once such a 'data-based decision making' is established politicians will find it extremely difficult to influence the final sanctions.

With the information gathered as the basis, plans can be made for implementation taking into account cost factors and resource availability. Programming techniques can be used where necessary to optimise the allocation of the scarce resources. Obviously a project should be sanctioned, only on the availability of the entire resource requirement. Responsibilities can be fixed so that a person can take charge of the project and work diligently for its completion. In the existing status such 'fixing up of responsibilities cannot be done unequivocally and hence 'passing the buck' is resorted to whenever a project is incomplete or delayed beyond reasonable limits. Implementing the projects can be systematic if such a planned approach is adopted.

A major cause of delay is the haphazard performance of the contractors. According to the existing regulations the tender system is being used to locate the contractor in a majority of the cases. This adds to the delay in implementing the projects. It should be understood that the tender system is one of the methods of obtaining the best contractor. If an equally good—if not better—method is available, that reduces the time-span for selection of the contractor, then the corporation will have the flexibility of adopting this methods.

Application of Management Techniques

The vendor-rating and source development techni ques adopted by the materials management profession can be used advantageously by the corporation. Th implementation wing will have a list of registered con tractors whose performance will be evaluated regu larly. They will be given ratings with respect to th quality of work completed, quantity they are abl to undertake, timely completion, rates charged etc The overall rating will then be a weighted average c these individual ratings and contractors within , threshold level of performance can be used withou fear of audit objections.

Source development is also required because i certain interior districts it is very difficult to locat contractors. At present such projects are undertake departmentally or are released on an adhoc basi Educated unemployed technicians can be formed int a panel and awarded such works either individually c in groups depending on the size of the job. They shoul be given the necessary technical guidance and financi support till they are able to stand on their own. If th corporation is to succeed in this venture, then should have a regularly up-dated cost data for th different types of works. The present method of reli ing on a two (or more) decade old cost data an adding a cost index percentage will not be effecti Network techniques like PERT/CPM will help getting the projects completed within the schedule time. Inclusion of cost figures will give a regul feedback on the amount spent thus preventing u warranted cost over-runs.

At present the department is being funded throug government grants that take into account land rev nue, share of the panchayats etc. The "Food-fo Work" programme is also being channeled through th department. The new organization should have fun on two accounts. (1) Organization account in t form of a recurring expenditure account and (Project account where allocations are made for pr jects whether in cash or in kind. The recurring e penditure account should include the finances requir for the maintenance of completed projects. The co poration should have the freedom to undertake pr jects for which it can raise resources. This will possible in "rich district". In such cases it should allowed to collect rates and make itself viable wi respect to such projects.

Another important function that can be undertak by the corporation is to help in the marketing effc With the development of the basic infrastructu village crafts will flourish and village craftsmen will

able to exercise their skills. They should be supported by an effective marketing outlet that helps not only in barter deals between villages, but also in selling the handicrafts produced in towns and cities. This can become a major source of income for the corporation that will be available for reinvestment. Once the cash inflow from these efforts picks up and the basic necessities have been provided the corporation can venture into small-scale industrialisation, agricultural workshops and other allied fields. The growth is primarily a need based growth beginning from the grass-roots and building by stages.

The board of this corporation should be broad-based. It should include politicians, administrators and academics. But the board will have a say only in the policy matters. The operations will be controlled by the Chief Executive who will also be a member of the board. The Chief Executive should essentially be a technocrat who has sufficient experience in the field. Such an approach will free the field executive from the shackles of dual control and they will be able to give their best. Their performance can be measured objectively and the reward system will then be more effective. This would lead to a matching of the organizations' goals and the 'individuals' goals, thus achieving the objective of providing the basic amenities to villages and helping in their reconstruction. □

GSFC's Impressive Performance

GUJARAT State Financial Corporation during the 1978-79 has sanctioned gross financial assistance consisting of loans and underwriting of shares amounting to Rs. 28.48 crore recording a growth of 15.28 per cent over the last year. In disbursement of loans as well a record of Rs. 18.74 crore has been achieved. It shows a rise of 33 per cent over previous year. This rise in disbursement improved the sanction-disbursement ratio to 75.56 per cent as compared to 63.69 per cent in previous year.

In backward districts, loans amounting to Rs. 13.22 crore were sanctioned which is an increase of 38 3 per cent. The relative share of backward districts in loans sanctioned rose from 43.6 per cent in 1977-78 to 53.3 per cent in 1978-79. A significant rise of 71.6 per cent in the loans sanctioned was recorded in 3 backward districts of Bharuch, Panchmahals, Surendranagar and Union Territory of Dadra and Nagar Haveli. Loans of Rs. 7.00 crore were sanctioned in these areas in 1978-79.

In 56 backward talukas of the State, substantial increase in assistance was recorded. It amounted to Rs. 223.84 lakh as against Rs. 127.90 lakh in the previous year. Indicating a rise of 75 per cent. For the industrial units coming up in rural areas loans amounting to Rs. 372 lakh were sanctioned in 1978-79 which is a record rise of 78.4 per cent over previous year.

The main thrust of assistance sanctioned by the Corporation continued towards small scale industries. In all 1009 small scale units were sanctioned loans of Rs. 15 81 crores. To improve the lot of weaker section of the society the corporation loans of Rs. 249.44 lakh were sanctioned to fishermen for purchase of fishing trawlers etc.

The Corporation has also formulated a scheme to provide financial assistance to the entrepreneurs belonging to scheduled castes/scheduled tribes on soft terms. Loans upto Rs. 2 lakh are being provided at concessional rate of interest of 9 5 per cent with lowest promoters' contribution. For filling up this investment gap the special capital scheme is operated by the Corporation, under which loan at 1 per cent is sanctioned in order to fill up the gap between the expected level of promoter's contribution and the amount which he can bring. Loans of Rs. 6.16 lakhs have been sanctioned to 12 units under this scheme at 1 per cent interest with moratorium of five years for repayment of principal amount.

After the taking over of the New Entrepreneur Scheme in the year 1978-79, the Corporation's assistance under the scheme reached to Rs. 129.73 lakhs recording a rise of 61.58 per cent over the previous year. As a result of determined and systematic effort to attract investment from non-residents of Indian origin settled abroad, the assistance sanctioned amounted to Rs. 137.63 lakh in 1978-79 as compared to Rs. 85.15 lakhs in previous year. Another achievement of the corporation is the increase in its paid-up capital from Rs. 8 crore to Rs. 10 crore reaching the ceiling prescribed under the SFCs Act. □

Onge Boy shows the Way

THE Onges are one of the six primiative tribes of the Andaman and Nicobar Islands. They numbering about 104 live in Little Andaman the southern most island in the Andamans. Shri Ramu a worker in Marine Department at Port Blair is one among them. In the morning of July 13, Shri Ramu went to the Syndicate Bank, near Gandhi Market and requested the Branch Manager to open a Savings Bank account in his name. The Branch Manager gladly accepted the proposal and opened the same in his favour. After some time Shri Ramu came out of the Bank with a pass book in his hand. He is the first person among all the Onges who became a customer of a Bank. Thus Shri Ramu has set an example.

Today Shri Ramu has made it clear that the 'Onge' has learnt the needs of Savings And he has shown a new way of life to other members of his community. Perhaps this may bring about a change in existing semi-nomadic life of Onges

D. Som,

F.P.O , Port Blair.

Tribals Tread a new path

JAI **Hanuman Thanda,** belongs to the Lamba nomadic tribe. **In the** course of their wanderi life, they came to **Gulbarga** in Karnataka ar started living in the outskirts. Since 1960 they ha engaged themselves in all sorts of small jobs. Durii this period their number swelled from 350 (35 hous holds) to 700 (70 households) but not their incom This increase in their number only aggravated the miseries and they were all reeling under perpetual i debtedness. The struggle for better life was on B a breakthrough was no where on the horizon. On tl dark ocean of indebtedness the sun cast its myriad ra at last. Canara Bank Gulbarga Branch found dairyi as an ideal avocation for them and advanced loans the tune of Rs. 43,325 to 37 Lambani families for tl purchase of milch buffaloes. SFDA, Gulbarga can forward to give subsidy.

This dairying not only has kept all the members family engaged throughout the day but paid them goo dividends to lead a happy and contented life. Th are now all in smiles and busy carrying milk cans Gulbarga for sale.

Fully satisfied with regard to the trend of loan repa ment, now the Bank is thinking of extending facilities to the Lambani tribals to take up sheep rearing and poultry farming also.

G. D. Pat

F.P.O , Gulbarg

Feeding our Millions : Strength and Weaknesses

T V. Satyanarayanan,

Spl. Correspondent, United News of India

WAY back in mid-sixties, some Western experts made what they considered to be profound predictions about India's agricultural future They predicted that wide-spread starvation and famine would stalk this country in the seventies. A tongue-in The—cheek comment came from Paddock brothers, who in their book "Famine 1975" said that the lot of the indians would be like that of sheep going to the slaughter house. Those were days when India was depending heavily on food imports to feed its population. Being sceptical about this country's ability to produce enough, those Prophets of Doom thought starvation was inescapable in many of the developing countries when the developed countries exhaust their capacity to meet the food needs of poorer nations

Fortunately, we have come a long way after that stage. What the Paddock brothers and those of that ilk could not envisage was the remarkable ability of the Indian farmer to receive new ideas and new technology to tap the vast production potential of the country

Four years have now passed after the deadline set by the Paddock brothers for the start of the famine era, and our agriculture seems to be growing from streagth to strength every year Our country has not only bid goodbye to foodgrain imports but is even seriously toying with the idea of exports on a sustained basis, after building up a big reserve stock. The total foodgrain stock with the government agencies is about twenty million tonnes.

The production figures for 1978-79 are indicative of the strides made on the food front. The latest estimates available show that foodgrain production has touched an all time high level of 130.5 million tonnes. This is about five million tonnes more than the figure for the previous year, which was another year of records.

Wheat output during the year may be about 34.7 million tonnes, almost three times the output when the high yielding varieties were introduced for the first time in the country. The increase in production has been reflected in procurement, which is a record eight million tonnes.

Rice production is estimated at 53.79 million tonnes, over one million tonnes more than the production in the previous year. This achievement is despite the devastating floods which hit the crops during the kharif season

Production of coarse grains is estimated at thirty million tonnes and pulses twelve million tonnes.

An analysis of the compound growth rates in agriculture would reveal that for the period 1967-68 to 1978-79, the growth rate for total foodgains is about 2.6 per cent per annum. Crop-wise, wheat has the highest growth rate of 6.4 per cent, while for rice it is 2.3 per cent. For cereals as a whole, the growth rate is 2.9 per cent.

It would be uncharitable to attribute the increase in production entirely to the benevolence of the weather. While weather does play an important part, much of the credit should go to the agricultural scientists, the extension worker, the policy maker and the planner, besides the farmer himself. Because, the factors responsible for the strides in production include improved technology, extension of irrigation facilities, increase in fertiliser consumption, extension of area under high yieding varieties, larger flow of agricultural credit and improved pricing and marketing facilities.

Untapped Production Potential

This is not to say that all is well with our agriculture and we can afford to rest on our oars. On the contrary, there are many weaknesses which need to be removed if we are to make sustained progress and build up a sound food security system to meet the rising needs of the population.

The projections of India's population at the end of this century vary from eight hundred and fifty million to one billion. Alongside, the per capita income and the nutrition level of the people are also expected to go up. At present, although the country has built up big food reserve, a vast section of the people are unable to buy it for want of adequate purchasing power. To that extent, these reserves can be called an artificial surplus, as Norman Borlaug put it. The question is :

are we in a position to meet the full needs of our population by the end of this century? Our agricultural scientists affirm that the country does possess the potential for the purpose—and much more. In this content, it would be interesting to recall an estimate of the absolute maximum food production in our country. On the basis of an understanding of the climate, soil, and water resources, some scientists have assessed the maximum food production potential of the Indian sub-continent at about 3200 million tonnes grain equivalent per year. This would imply that the maximum potential is about twentyfive times the present level of production. Of course, the assessment is more in the nature of a theoretical exercise. For one thing, the entire land available cannot be used for grain production, as there are other important crops that need to be grown. However, such reassuring exercise would indicate the vast untapped production potential which the country possesses.

Low Yield

In fact one of the principal weaknesses of our agriculture at present is the low yield per hectare. The potential for higher yields is our strength. An analysis of the results of national demonstrations has shown that average yield obtained by farmers and the yield of national demonstration plots ranges from two to four in different parts of the country in the case of wheat.

In rice, the ratio between the actual and potential farm yields ranges from two to five at different places.

The highest yield obtained in national demonstrations in wheat is 10,200 k.g. per hectare, as against the national average of 1,300 k g. This clearly shows that we have touched only the fringe of the potential. Much can be achieved if the traditional varieties, still being grown in nearly forty per cent of the area are upgraded and the problem of diseases is tackled successfully. Interestingly, the per hectare yield of wheat is high in West Bengal, a non-traditional wheat area. This could be attributed to adoption of all the recommended practices by farmers of the state.

Some of the lowest per hectare yields in rice are recorded in states like the north-eastern region where growing of new dwarf varieties is yet to make headway. The fertiliser responsive dwarf varieties give as much as three times the yield of traditional varieties. The dwarf varieties have given an yield of four tonnes per hectare in farmers' fields as against the highest national average of 1.14 tonnes per hectare given by the traditional varieties in a good year.

In jowar, the yield level has been almost stagnan for a long period of time and the difference betwee the actual and the potential farm yields is very high The ratio goes up to eight in some places of Mahara shtra and Rajasthan. In fact, the production potentia is high for all the coarse grains. But they remain a one of the weak links in our production chain. The crops—jowar, bajra, maize, ragi, small millets, an barley—are very important, since they are produce mostly by comparatively not-so-well-off farmers in ari and semi-arid areas with no means of irrigation. Her the extension worker can play a crucial role in popu larising among the farmers the new varieties and th new technology for dryland areas evolved by th scientists.

The importance of new varieties for rainfed area was probably best demonstrated four years ago i Maharashtra where the rains withdrew earlier tha usual. Farmers then found what a boon it was to gro short duration high yielding varieties of CSH varietie of jowar. While their crop was ripening in the field the traditional long duration varieties in the neighbour ing fields were weting in the sun. There was all th difference between total loss and total success.

A major area of neglect in our agricultural prog rammes so far has been the production of pulses an oilseeds. Pulses, which are a rich source of protei are particularly important in a predominantly vege tarian country like ours. Pulse production in 1978-7 is estimated at twelve million tonnes, only a shad better than the previous year's output. The growt rate of pulses production has been tardy for the la few years, being only 0.33 per cent from 1967-68 t 1978-79. Nutrition experts feel that the country requir seventeen million tonnes of pulses, while the actu production has been ranging from ten to thirtee million tonnes. One of the main reasons for low pro duction of pulses is that these crops—like the oilseec are grown mainly in rainfed and marginal areas. Onl about ten per cent of the area under these crops ar irrigated.

In the case of oilseeds, although production has bee showing an increase, most of it has been due to increa in area. The increase in yield has been only margina Average production of oilseeds in the last five yea has been over nine million tonnes, and the averag production of vegetable oils about 2.4 million tonne The edible oils provide the main source of fat in o diet. Nutritionists have estimated that the per capi average consumption of fat in the country is ten gran per day which is abymsally low. Even if consumptio

is maintained at the present low level of ten grams per person per day, the country would need another one million tonnes of edible oil to meet the domestic demand. The government therefore has been forced to import vegetable oils worth over Rs. 500 crores per year recently.

Determined efforts are needed to boost the per hectare yield of oilseeds, which is very low. The per hectare yield of groundnut is only about 800 kilograms as against 2000 kg in the United States. The per hectare yield of rapeseeds is, 400 kg, compared to the world average of 630 kg.

The strategy for boosting production and productivity of oilseeds should include not only the use of advanced agronomy and high yielding varieties, but also a concerted effort to develop minor oilseeds like neem and sal.

There is also a variety of other sources for extraction of oil like rice bran, maize germs, mango kernel and cotton seed. Development of minor oils from forest trees would help to improve the economy of tribals living in those areas as well.

Future Strategy

One wonders whether adoption of crop planning would not help in stepping up production of crops like pulses and oilseeds. Various cropping patterns could be planned in such a way as to benefit both the producer and the consumer. Of course, the farmer would ultimately decide what crops he should grow. But right incentives, especially in pricing and marketing, can go a long way in making crop planning a success. Such a step can remove distortions and imbalances creeping into the production programmes.

In any future strategy for agricultural development, there are a number of components which would need greater attention, each component as important as the other. They include integrated pest and disease control, in which community effort should become a part of the system, soil and water conservation, watershed management and post harvest technology.

Soil and water conservation measures would promote mixed farming activities embracing horticultural and plantation crops, animal husbandry and dairying, backed by fodder cultivation and agro-forestry, depending on local conditions. Where conditions permit, aquaculture can be woven into the system to yield more profit.

The importance of soil conservation would be evident if it is realised that the general nutrient status of the soil is low in most parts of the country. Erosion removes the facility of the soil. Consequently, the physical condition of the soil deteriorates and causes decline in crop yields. Soil conservation scientists have calculated that the annual loss of soil due to erosion is about 6,000 million tonnes, and that of nutrients—nitrogen, phosphorous and potash—3.4 million tonnes. Besides taking steps to check the large scale soil erosion taking place in agricultural and non-agricultural lands, the cultivators will also have to be induced to take measures to maintain the soil health.

The farmer cannot expect a fair deal, nor can the consumer be assured of satisfactory quality, unless research on post harvest technology is stepped up. Such a technology should aim at integrated systems of production, processing, storage and marketing. Efforts on these lines would generate more employment and additional income in the villages.

The bumper production of potatos this year was an eye-opener. There would not have been complaints from farmers about prices touching unremunerative levels, if there had been adequate cold storage facilities or facilities for processing them into high value consumer products. Likewise there is abundance of fruits and vegetables in certain seasons. For lack of canning and processing facilities, they do not fetch good prices to the growers. The problem is worse in hilly areas where transport costs are high. Transportation of fruits may be costly. However, it would be more profitable to convert them into fruit juice concentrates or preserves.

For any product to become remunerative, development of proper marketing facilities is essential. An assured market is a definite incentive to production.

An equally important aspect of post harvest technology is storage. After being caught napping in the wake of a series of bumper harvests, there has been an earnest effort to build up a good storage system in the country. According to a recent study, the foodgrain losses in post-harvest operations exceed twelve per cent of the total output. The study said that in twentyfive years after the First Plan was started, the country had lost over 250 million tonnes of foodgrains in threshing, transportation, processing and storage. This is almost equivalent to the country's total output of foodgrains in two recent years.

In storage, it is not enough to provide merely some conventional godown facilities. There is need to maintain the nutritive value of the grain for the consumer, and to preserve what experts would like to call as "fresh grain smell". All these underline the imperative need for building up a sound storage system, not only for foodgrains, but all food items, including fruits, vegetables, milk and all processed products.

In this context, the recent decision to set up a network of rural godowns in the country is indeed welcome. Besides enabling the farmer to preserve his produce better, there are other advantages of spreading grain storage in a vast country like ours. It would impart a psychological sense of security in the minds of buyers and sellers and thereby contribute to price stability.

Many more areas can be cited that need to be strengthened if we are to achieve a dynamic growth in agriculture and allied sectors. Broadly, they should buttress the technology for increasing production and productivity. The technological strides should be backed by an effective package of public policies.

Our country has all the resources to become a firs rate agricultural power. The list of our assets is indee imposing. To cite a few of them, we have sunlight i abundance, essential for good crop growth. We hav mighty rivers and other water resources which are wai ing to be exploited. We have a rich variety of soil and agro-climatic conditions needed for growing a wid range of crops. Our livestock population is equall imposing, as also the fish wealth, both inland an marine. Above all, we have hardworking and intell gent farmers who, given the wherewithal, can delive the goods.

But one feels that progress would be easier an smoother if all those engaged in the task of agricu tural development make an earnest effort to keep th sector away from politics. Food is too vital a sub ject to become a plaything in the hands of politician It should be free from controversies, group rivalri and narrow loyalties. The only consideration tha should guide the policies and programmes should b the overall national interest. □

Energy Crisis : A Blessing in disguise

Cont'd from Page 7

If the agricultural and forest products have to cater food, energy and other requirements of mankind, man cannot affort to destroy forests and occupy agricultural land for his living.

A country like India, which has very limited land, maintenance of rural environment will soon become a luxury. The effect of deforestation and reclamation of land is already affecting the environment which has become detrimental to the future development of the country. Indiscrimate destruction of forest for human habitation and agricultural expansion has created a situation which is responsible for floods, soil erosion, droughts. Unless existing situation is reversed through planned action, India may in the course of a century or so, be converted into a big desert and a part of aid zone of the world.

With the increase of population and pressure on the land, the concept of rural habitat and development, may have to be changed into a highly concentrate urban society, thus relieving the pressure on land an converting most of the land—each surviving as com plementary to each other. It should not be forgotte affluent rural society takes away useful land fo habitation and reduce the much needed land fo production of food and resources for future energ requirement. Concentrated urbanisation must be com bined with consolidation of fragmented land throug cooperatives for application of modern scienti knowledge and technology to meet the increasi demand for food and supply of stock for production much needed energy through bio-mass conversio technique.

If India wants to be a prosperous and happy natio in 21st century, it is time for initiating integrate planning for socio-economic development, not fashion as it is done at present, but with a mo pragmatic and futuristic outlook. □



POVERTY

OUR FUNDAMENTAL PROBLEM

Mumtaz Ahmed Khan,

Research Scholar, Gorakhpur University

POVERTY and underutilization of the vast man-power are our most pressing problems of today. According to the Pla ning Commission, on the asis of 1972-73 price level minimum per capita monthly consumption-expenditure should have been s. 40 6. On this basis the Planning Commission esti-ated that 30 per cent of the total population of the ountry or 20 crore of our countrymen live below this inimum consumption line. In no other country of e world probably such a large chunk of the population 'e below the poverty line. Such is the magnitude of e problem in our country. According to a working per of the Asian Development Bank, two third of orld's 800 million people classified as "Absolute poor" e very commonly found in India, Bangladesh, Pakis-tan and Indonesia Developing Asian countries were undertaking "Lopsided" development programmes that did not meet basic human needs, the paper added. Despite impressive growth rates and National Agri-cultural Product and GDP per capita poverty is persistent and wide spread ; a disturbing manifestation of lopsided development.

Removal of this socio-economic evil has therefore, become the goal of our government. So four main objectives are selected for the Sixth Five Year Plan. One among them is to achieve an appreciable rise in the standard of living of the poorest section of the population.

A three sided attack on this giant problem of poverty is urgently needed—first by accelerating the economic growth rate of the country; second, curtailing the rate of growth of population and third reducing the concentration of wealth and economic power in a few hands and ensuring a fair distribution of the National Income in the future. Providing gainful employment opportunities is another precondition to increase the purchasing power of the masses.

Measures to speed up the Growth Rate

The slow and dull growth rate of our country has been the main cause of poverty which we see today. In the first decade of economic planning the growth rate was 3.8 per cent per annum, which came down to 3.7 per cent in the next decade (1960—70). If we remember that our annual population growth rate is 2.5 per cent per annum then this growth rate of our country is very slow. To achieve the desirable rate of growth of economy gross-national out-put must increase by 5.5 per cent per annum. This would mean that annual agricultural growth rate must be 4.8 per cent and industrial output must increase by 9.2 per cent per annum.

Speedy and genuine implementation of the land redistribution and reform measures is necessary to give incentive to farmers to increase agricultural output. Agricultural inputs like better seeds, manures, cheap and easy irrigation arrangement, cheap agricultural finance and other related needs should be available, so that the agricultural productivity may ultimately increase and the total production should be available for fair distribution within the country among the sons of the soils.

A re-examination of fiscal and monetary measures for promoting growth rate is needed. Tax structure should be so fashioned as to promote growth and increase saving and capital formation on the one hand, and to reduce economic disparities on the other Government expenditure has increased unnecessarily in recent time in the country and much of it is wasteful expenditure. This must be curtailed to inspire public confidence and secure their cooperation in development activities.

In 1960—71, our compound growth rate of population was 2.19 per cent. As a result of the increase in population and the limited cultivated area, the land-man ratio has declined. The small sized holdings for cultivation constitute an important constraint on the use of modern implements, quality seeds, high potency fertilizers etc. The result is low productivity and hence the lack of marketable surplus with the farmers. The growth rate of foodgrains over the decade was 1.99 per cent a year. It indicates that the deficit of foodgrains (in quantity, let alone the quality necessary for balanced diet and nutrition) increased by 0.20 per cent (2.19 minus 1.99 during 1960—71). The increase in cultivated area under food crops by 0.84 per cent per annum was not very helpful. The only way to increase production is to implement multiple cropping technique by using more tractors, tillers, threashers, tube-wells and pumpsets with adequate supply of power. To begin with, much investment on these is urgently needed.

Measures to Curtail Population Rate

Due to prevailing growth rate of population the unemployment level is also increasing day by day. The total unemployment in Rural and Urban areas in 1972-73 was 239.8 million. Employment during beginning of the last decade was increasing at a compound growth rate of 3.4 per cent per annum But due to increasing population level in the end of the decade it came down to less than 3 per cent. At this rate of 3.54 per cent per annum only 4 millions were able to get work out of present unemployed persons. To absorb the increase in the labour force, the employment rate must be increased by 8 per cent a year. Unless this is done or the population growing by 2.7 per cent per annum is brought down, the level of unemployment and poverty would be going up day by day. This shows the need to increase the rate of annual output and gross national income and to check the rate of population growth because it follows that the government efforts to increase food and production of the consumer goods have been always nullified by the rising trend of population.

The present situation demands again intensive implementation of family planning programmes. Previously the programme of family planning had been implemented vigorously, but during the last two years there has been a considerable slackness in that field. In a country like India the population factor is so vital that any slackness in this field will be suicidal for the country. Therefore, family planning programmes should be taken up in all seriousness with suitable changes in the content to effectively curtail the population growth

At present annual growth rate of population is 2.5 per cent. This means a net increase of 1.5 crore to our population per year. The Fifth Plan intended to bring down this rate of population growth to 1.7 per cent per annum. So both the demographers and social reformers believe that raising the age of marriage will be helpful to reduce the growth rate of population by curtailing the period of fertility.

In our country the child marriage restrain act has been amended twice in recent years to raise the age of marriage with the hope that the birth rate would

(Contd. at Cover III)

A point of view

Minimising Concentration of Economic Power Role of Public Financial Institutions

Dr. B. P Sharma,
Senior Lecturer
Financial Management & Research,
Raj Rishi College, Alwar.

SINCE independence, India has taken major strides towards progress and today it is counted among the leading industrial countries of the world. She is world's tenth most industrialised country and has the third largest number of trained technical personnel after the U.S A. and the U S.S R. The country seems to have reached a stage of economic growth and maturity with a strong agricultural and industrial base with remarkable achievement in foreign trade and accumulation of foreign exchange reserves with high degrees of economic self-sufficiency in essentials and with a fair degree of price stability as compared to several developed and developing nations of the world. On the contrary, the darker patches in the picture are problems like growing unemployment, acute poverty and concentration of economic power.

The study seeks to discuss the role that Public Sector Financial Institutions can play to curb the concentration of economic power in India. Here, an attempt has also been made to raise other relevant issues of interest to scholars of finance and management.

At the very outset one should be clear about the meaning and size of the problem relating to monopoly and concentration of economic power with a few large industrial houses. A large industrial house has been defined as (a) which by itself or together with interconnected undertakings, as defined in the MRTP Act 1969, had total assets of Rs. 20 crore or more, (b) in the case of a dominant undertaking even when assets exceed Rs. 1 crore, and was registered under Section 26 of the MRTP Act. Almost invariably, Monopoly in Indian economy is described along with concentration of economic power, while monopoly conventionally means control over the supply of a particular product so as to influence its market price, concentration of economic power in a broader sense, suggests power to influence the overall level of employment, income and industrial production in the economy The rapidly growing strength of Industrial Giants in India is demonstrated in Table 1.

As on June 30, 1978 there were 1,162 undertakings on MRTPC register under Section 26. Of these 1,116 come within the ambit of Section 20 (a), comprising 1,036 joint stock companies and 80 firms.

The table reveals that the House of Birla stands FIRST among large industrial houses which has increased their profit before Tax (PBT) by as much as Rs. 73 crore, turnover by Rs. 532 crore and assets by Rs. 385 crore during the period 1972-76. In comparision to the House of Birlas, the PBT of Tata stepped up by only Rs. 7 20 crore, Mafatlal by Rs. 11 25 crore and Macneill and Magor by Rs. 16.83 crore. In 1976, the profit made by the House of Birlas amounted to about Rs. 119 crore which was twice that of Tata, while others trailed far behind excepting Thaper, which earned Rs 33 crore.

With regard to rise in the assets during the same period, the house of Birlas surpassed the other industrial houses by effecting an increase of Rs. 385 crore followed by Tata by 338 crore, and J. K. Singhania by Rs. 120 crore.

In respect of turnover also the largest increase was recorded by the house of Birlas (Rs. 532 crore) followed by Tata Rs. 445 crore, Oil India by Rs. 264 crore, Mafatalal by Rs. 192 crore and Thapar by Rs. 130 crore. The total assets of Tatas in 1976 stood at Rs. 981 crore slightly surpassing the House of Birlas with Rs. 975 crore. In the case of total turnover both these houses are neck to neck

with Rs. 1.138 crore and Rs. 1.122 crore respectively. What is more, the 25 top industrial groups in the private sector account for about 31 per cent of the total assets of private industry and 18 per cent if both the private and public sector are put together. It is certainly a significant proportion which needs to be checked in order to curb the tendency towards concentration of economic power in a developing country like ours.

Facts about Multinationals

In the above context it would be pertinent to examine some glaring facts about the Multinational Corporations working in India. The total assets of multinationals rose to Rs. 2,890 crore in 1977-78 from Rs. 1,160 crore in 1971-72, i.e. a rise of 100 per cent within a short span of six years only. The profits before tax of these multinationals in 1971-72 were Rs. 53 6 crore against Rs. 52.3 crore in 1977-78.

At the end of March 1977, 473 branches and 146 subsidiaries of Multinational Corporations were operating in India. The assets of these subsidiaries in the relative period were Rs. 1,145.14 crore and Rs. 1,740 crore. Their profits for these years amounted Rs. 171 crore and Rs. 141 crore respectively. However, remittances made by Multinationals and their subsidiaries in 1971-72 were of the order of Rs. 80.70 crore and the same shot up to Rs. 115.30 crore by 1977-78. This dominating position of the foreign companies in a country which got freedom from the colonial rule only three decades back is very dangerous. Every effort, therefore, should be made to replace multinationals by Indian entrepreneurs so as to retain huge profits in the country for further industrialisation and thereby ameliorating the poverty stricken conditions of Indian masses.

Evils of continuous growing industrial empires are manifold. Shri Paranjape has aptly observed: "If a handful of families are going to build up expanding empires of industries, can one expect labour to take an interest in higher productivity, professionals to feel committed to the pursuit of higher levels of attainment and creative and scientific minds to flower through research and technical development? These questions have only to be asked—to be answered in the negative."

The history of Indian industry itself proves how, in a majority of cases, concentration of economic power has led not only to common detriment but also to industrial deterioration. What is worst, industries built up on the basis of tariff protection provided at the cost of the community's merciless exploitation, profits squeezed out of them, and there after they were kicked-left in the form of sick mills rather chronically sick industries which have to be taken care of in the PINJRAPOLE (Cow shelter) of the Government's scheme such as National Textile Corporation etc Case after case illustrates how shortsighted entrepreneurs least mind continued dependence on alien collaborations and neglect Research and Development. They tarnish the image of Indian industry through poor quality control and production of shoddy goods. There are of course some exceptions, but these are very few.

The resulting necessity in our context of ensuring that concentration of economic power does not increase was realised by the country's leadership even before independence. But effective steps could only be taken after Aug., 1947. Enlargement of public sector, nationalisation of life insurance and commercial banks, tightening of company law, acceptance of the socialistic pattern of society as the goal of economic planning, introduction of MRTP legislation were all moves to curb the concentration of economic power in the country.

Economic development and specially the development of modern industry in a country like ours requires the growth of a certain number of very big units employing huge amounts of capital. Unless we want to permit large inequalities of income and wealth to be perpetuated, such large amounts can only be provided through Public Financial Institutions in one way or the other. The old concept that finance will be provided by public institutions but the management will continue with privileged groups of few families is no longer acceptable. Ideologically as well as pragmatically it is now demanded that professional management should replace family management. Thus, atleast in the most crucial and basic industries, it is necessary to make sure that structural transformations are brought about enabling the industry to grow in such a manner as to subserve social objectives.

Role of Public Financial Institutions

The exact solution may vary from case to case and no prudent physician would give single prescription—RAMBAN DAVA—for different diseases. The growth of public financial institutions such as IDBI IFCI, ICICI, IRCI, UTI and commercial banks was the right step in the right direction. They have no

only curbed the concentration of economic power but also promoted tiny and small industries. Their existence in nationalised sector has more weight as they have sizeable holdings of private sector units (as much as 31 per cent in the top 3 companies of the private sector).

The Industrial Development Bank of India has been according a high priority to the small scale sector In view of the important conribution this sector could make achievement of socio-economic objectives of a more equitable distribution of income, ownership of means of prcduction, widening entrepreneurial base, and realisation of well dispersed industrial growth leading to decentralisation of economic power Besides, the small scale sector, with lower gestation lags and capital intensity, is capable of generating more employment at lower capital cost, especially, in those regions where economics of scale are not substantial. The IDBI's assistance to this sector is channelised mainly through its scheme for refinance of industrial loans and to a limited extent through the Bill Rediscounting Scheme.

The assistance sanctioned by IDBI to small scale sector, during 1977-78 amounted to Rs. 151 crore on 12,956 applications as compared to Rs 152.6 crore on 12,057 applications in the previous year

Since 1970 the IDBI has taken several measures to step up the pace of industrialisation in the relatively backward regions of the country which large industrial houses are still reluctant to adopt A separate department for the Regional and Backward Area Development has been set up to look after project promotion and associated development activities in the backward regions. Industrial Development Bank of India sanctioned Rs. 122 crore during 1977-78 as refinance assistance for projects in the backward areas as compared to Rs. 112 crore in the previous year. These loans are granted by the Long-Term Financial Institutions at concessional rate of interest i.e. 9.5 per cent against the normal rate of 11 per cent. The utilisation of assistance by such projects was also higher at Rs. 72.6 crore during 1977-78 as against Rs. 65.8 crore in the previous year. These figures fairly indicate the role played by IDBI in decentralising the economic power.

Assistance to MRTP Companies

During the last 14 years (1964—1978) of its operations, IDBI has sanctioned assistance totalling Rs. 587.6 crore to MRTP companies comprising project assistance of Rs. 526.7 crore and export finance of Rs. 60.9 crore. The share of assistance to such companies was as high as 48 per cent in the first five year period 1969-74 Since then, the share has declined to 11 per cent during 1976, though it slightly increased to 16 per cent during 1977-78. This rise related to four priority projects in electricity generation (100 per cent), cement (24 per cent), paper (18 per cent) and machinery manufacturing (35 per cent). Since the MRTP companies have the requisite financial and managerial resources to undertake projects in core sectors which involve high capital costs, sophisticated technological risk and managerial skills, licences were issued, understandably, to MRTP companies by Government and their share in IDBI's direct assistance is high in these sectors. But it is hoped the sooner such industries are set up by public sector the earlier monopoly of larger houses will be minimised.

Like IDBI other Term-Financing Institutions are also engaged in pious pursuit of minimising unbalanced growth of the country. Assistance granted by all India Term-Financing institutions to projects in specific backward district, in 1977-78 was higher at Rs. 512 crore (47 per cent) in comparision with Rs. 390 crore (45 per cent) in the previous year. In order to curb concentration of economic power of Indian giants these financial institutions have also changed their credit policies Consequently, the assistance provided by these institutions to public sector went up to about 16 per cent during 1976-77 while to joint sector it varied from 6.9 per cent in 1975-76 to 17.4 per cent in 1977-78 The sharp increase in assistance to Joint Sector during 1977-78 was mainly because of large assistance to a Joint Sector fertiliser project in Gujarat. The share of the co-operative sector in total assistance during the last three years have doubled from 5 to 10 per cent.

As regards commercial banks, their performance in the field of branch expansion alone has not only been complementary to the government's efforts as well as conducive to their own business growth in rural areas, but also responsive to the aspirations of the society.

Conclusion and Recommendations

It is clear from the foregoing analysis that entrepreneurship and innovation which are essential for the satisfactory performance of the private large industrial sector are at a discount, in India. Though it may sound harsh, it appears that the main objective of such enterprises today is to maximise financial returns for the enterprises without much consideration for the society. The present system of licencing and control has miserably failed to attain the desired ends. In this context Mr. G. R. Kulkarni has correctly observed

that "the whole system of licensing has been reduced to an ineffective and redundant exercise". It is not exaggeration to say that big business houses are accustomed to it and the same suits to their strategy. In this context it is interesting to mention that in all 426 industrial licences were issued during 1977-78 of which 65 were given to the larger houses.

It is obvious that Public Financial Institutions have established their credibility in curbing concentration of economic power in the country. In order to boosting their activities further, the following observations could be of great practical guidance :—

(i) **Pubilc Sector to be Geared :** It appears that the first set of measure to be taken for securing effective control over the performance of the large private industrial houses is with regard to the functioning of public sector enterprises. The top most priority must be accorded to their efficient working. The fast expanding public sector is already functioning as a counterveiling balance in economy. The first six of the 100 giant companies in India belong to the Public Sector only. Government has already invested about Rs. 15,000 crore in the public sector enterprises. Hence, without wasting time on controversies as to priorities of socio-economic objects etc. they must be helped in sorting out their problems, getting their capacities fully utilised and products marketed and new technologies developed. Costs have to be reduced and wastages eliminated. The public financial institutions can play greater role in providing assistance in the field of management and finance both. The public sector would not only act as an instrument of healthy competitor against large industrial houses but also help in developing research and sophisticated technology.

(ii) **Perks for the Managers :** Big companies flout guidelines issued in November 1978 by the Deptt. of Company Affairs according to which salaries of Top-Level Executives-Directors and Managing Directors—were pegged at Rs. 1.32 lakh per annum. But the salaries of the Middle Order Managers were not fixed. The big industrial houses took the benefit of this loophole in the existing Law and about five leading business houses employed 7 of their Top Executives—of the rank of Directors—as Middle Order Managers —thereby protecting their pay, perks and commission being drastically reduced by Rs. 91,000 per annum. The salaries of these Middle Order Managers were not only fabulous but also much higher than even those of a Top Executive. Hence, Government should bring in amendments to the company' Act so as to fix the perks of the Middl Order Managers also to the level of top executives. This amendment is likely to minimise the disparity in the salary of public sector managers and private sector managers and thereby attracting more professional managers towards public sector enterprises.

(iii) **Allotment of shares to Public Financial Institutions :** Blanket right to the Government in alloting shares to Public Financial Institutions on the priority basis should be given in event of equity dilution of any foreign company. This amendment is certainly in the interest of the company. With a larger stake in its equity capital, the public financial institutions will also be equally concerned in the working and progress of the company like shareholders and management. Though this amendment may generate a lot of anger among the existing shareholders of the company as was found in the case of Cadbury India Ltd. But in the larger interest of the country and curbing the concentration of economic power in few hands, this amendment in FERA should be passed as early as possible.

(iv) **Social Evaluation Essential :** The larger industrial houses should help in the larger interest of masses and setting up an egalitarian society and achieving higher standard of living for the common citizen. It means that their social evaluation is essential to judge their annual performance. The criterion of social evaluation should be based on the fact that how much initiative and innovation has been taken by the enterprise and whether it has been able to make economies of scale and remitted all government and semi-government dues against it. This social evaluation work should be performed by the Deptt. of Industries which acts as friend, philosopher and guide for the enterprise.

(v) **Monopoly Commission to Act as Watchdog :** Numerous instances can be cited from recent experience which suggest that Monopoly Commission has to a large extent surrendered its role of being an objective and watchful body for ensuring reasonably curbing acts and pacts leading to concentration of economic power. It has, of course, been failing to perform this function for a long time, still

it is hoped that it would take responsibility to investigate into cases of monopoly and take remedial measures if the code of conduct regarding concentration of economic power to the common determent is violated by any undertaking of group of unudertakings.

(vii) Beware Back door monopoly : It has been observed that some clever large industrial houses have been setting up small scale units with an investment of Rs. 7.50 lakh in benami names by skillfully avoiding the application of the provisions of the MRTP Act. The need of the hour is to stop this manipulation immediately. Delay in getting licences, registration, financial assistance or other type of assistance like import of machinery and raw materials etc. are some of the factors responsible for this Back Door Monopoly in the sphere of small-scale sector.

(viii) Nationalistic Outflood Needed : It has been a common practice of public financial institutions to insist on personal guarantees from members of the large industrial houses approaching them for funds for industrial projects. It is funny, that on the one hand MRTP Act aims at discouraging big business and on the other the public financial institutions appear to follow a manner of preferring them like this. Similarly in introducing the convertibility clause also the interests of financial institutions seem to be at cross purpose with the interest of the consumers. This type of attitude is most deprecable and should be dealt with heavy hand. These institutions are owned and run through public money and must act in the larger interest of the community

It is only reasonable to expect from these institutions a sympathetic approach to the requirements of the country. It would be appreciated that a sense of nationalistic attitude on the part of public financial institutions can show miracles in the sphere of economic growth, social welfare and justice, better distribution etc. A special responsibility rests on the financial institutions and they will be failing in their duty if they do not justify the confidence people have posed in them □

TABLE 1

FINANCIAL STATEMENT OF SELECTED JOINT STOCK COMPANIES RELATING TO LARGE INDUSTRIAL HOUSES IN INDIA DURING 1972 & 1976

(Rs. in crore)

Name of the Industrial House	No of undertakings	1972			1976		
		Assets	Turnover	PBT	Assets	Turnover	PBT
Tata	32	642	693	49	981	1,138	56
Birla	70	589	590	46	975	1,122	119
Mafatlal	14	184	191	15	257	373	26
J K. Singhania	28	121	104	06	241	245	8
Oil India	6	104	136	15	203	400	20
Thapar	35	136	155	11	202	285	16
I C.I.	7	135	149	17	199	307	33
Hindustan Lever	8	78	188	11	123	289	22
Macneil & Magor	34	65	050	3	113	101	20
Single Large Undertakings	26	650	663	61	1,007	1170	45

A Story of Success—Malur Rural Project

Kamala Kumar
Asst. Director
S.N.D.T. Women's University, Bombay

MALUR, once a sleeping small taluk near Bangalore is now vibrating with new found enlightenment and activity. No longer, people living here think that they should lead the life assigned by God. They have realised that their future is in their own hands and way of thinking. The incessant insight implanted in their minds jointly by the Family Planning Association of India and the Research and Evaluation Wing of the India Population Project, has brought about this spectacular change in their attitude.

The Family Planning Association of India and the Research and Evaluation Wing of the India Population Project (set up in Karnataka in 1973, by Government of India, with the assistance of World Bank), pondered over the delicate issue of family welfare. They were aware that the problem requires a multipronged approach in a limited area. So they decided to launch a rural project in the Malur Taluk, Kolar District of Karnataka. The Taluk has an area of 6475 Sq. Kms. with a population of 1,17.309 (1971 Census) spread over 334 villages.

As a part of their experimental rural project the F.P A.I. has taken up Family Planning and Maternity Child Health Work throughout the Malur Taluk. The project has a network of trained staff to look after the Programme with an Apex Implementation Committee, Liaison Committee, Project Director, Administrative Staff, Technical Staff and Community Welfare Workers. An integrated approach to family welfare, consisting of the following, has been formulated.

1. To improve existing family welfare and M.C.H. care with good follow up programme.
2. To give health education to rural population with Audio-Visual Aids, mass contacts and personal contacts.
3. Organise Population Education through youth clubs and Mahila Mandals.
4. Identify and train youth and women leader for effective community work.
5. To train and give better equipment for local Dhais in conducting deliveries and to involve them in Family Welfare Work.
6. Organise developmental activities like dairy farming, co-operatives, balwadis, sericulture vegetable growing, adult education etc. with the help of mahila mandals and youth clubs

Out of the 300 local 'dhais' 240 have been given half day training consisting of basic procedure in delivery, and motivation of family planning. They were given a token sum of Rs. 5 for attending the programme, so that it could act as an incentive for the other dhais to come forward for training. They were also given a kit with minimum requirements. This is one of F.P.A.I.'s main contribution in the project

The programme co-ordinator with the help of community welfare workers organised youth clubs and mahila mandals by identifying talented local leaders About 252 community leaders have been trained from 1976 in 5 training camps and about 637 teachers, at 10 training programmes. About 1616 youth club members have been imparted training in child care in 66 training camps. In 1978, seven training programmes were organised. About 420 rural housewives had been taught how to preserve food in hygenic conditions.

The Mahila Mandals have been organising balwadis in villages which are very popular. From 1976-77 to March 1979, 57 youth clubs and 17 balwadis, have been organised. □

Dangis Of Udaipur

Habitat Economy And Society—by *A. N. Bhattacharya and Ravindra Nath Vyas—Concept Publishing Co., Delhi;—Pages* 160 ; *Price Rs.* 60.

DIFFERENT tribes have different problems facing them and unless they are studied thoroughly and minutely, it may not be easy to come to grip with the difficulties faced by the people. By a micro analysis of the tribe, one comes to know where actually the shoe pinches.

'Habitat Economy and Society' provides a systematic, organised and at the same time an analytical account of the relationship existing between a simple but distinct farming group and its economy and social structure on the one hand and the total physical and cultural milieu, characteristic of the Udaipur basin on the other. The study investigates for the first time the totality of the life of the Dangis of the Udaipur basin, from the broader viewpoint of developmental planning at the micro level.

With nearly 70 per cent of the people living in villages and about 50 per cent of the national income generating in the agricultural sector, the importance of rural sector in any programme of economic development in India is obvious. The Indian experience of planning and development has clearly shown that piece-meal and adhoc approaches and policy measures will not bring about the desired results. What is, therefore, required is an integrated approach to rural development. The study under review provides such an integrated study of a micro group, a small section of a tradition bound peasant community occupying a specific area over a period of time sufficient enough for adapting itself to the local milieu.

The authors have worked very hard because there has been no published or even unpublished material available on the Dangis except a 'few verbal traditions and folk lores collected from the Bhats of the Dangis or Dangi chroniclers'. The complete dearth of information about the Dangis, lack of data, problem of collection of data in the field of arising out of the reticence, cynicsm and suspicious nature of the Dangis, difficulty of movement in the remote villages as well as 'financial' difficulties, would definitely have put a strain on the authors, but they really have done a yeoman's job by laying thread-bare the totality of a tribe.

The content of the study has been arranged in five chapters, namely, the first dealing with tribe ; the second with the settlements occupied by them ; the third and the fourth with their economy and finally the fifth dealing with the social structure of the tribe covering three major aspects of the study e g. the group or the folk, the habitation being an aspect of the place or the habitat and the economy or the work by which the group sustains itself.

The importance of such a study in a multi-cellular country like India cannot be exaggerated and it will be academically very rewarding if geographers in India use their prerogative in this interesting but largely unexplored field.

The Udaipur basin, which remained conspicuously isolated for centuries because of its inaccessibility, opened up only since 1947 Habitat studies of this nature very rightly occupy the status of a unique field of investigation and planning, incorporating the combined genius of the geographer, the economist, the sociologist and the educator.

The study is a major contribution to a subject, which is engaging the attention of experts in various fields of research and planning. Planners and scholars in 'rural development of the country' would definitely benefit by it.

B. R. Kharbanda

Family Planning

Family Planning Under The Emergency—by *V. A. Pai, Panandiker, R. N. Bishnoi and O. P. Sharma, published by Radiant Publishers, E-155 Kalkaji, New Delhi*—110019. 1978, *pp.* 176, *Price* Rs. 35.

EXPLOSION of population all over the world is presenting a formidable problem for all countries but it is much more so in the case of developing and underdeveloped countries where their economy is unable to cope with the rising number of mouths to be fed. The present publication based on an on-the-spot study in U. P. Bihar, Bihar, Madhya Pradesh and Punjab, attempts to analyse the policy implications of the scheme of incentives and disincentives introduced in 1976 and the administrative set up to implement it.

The authors who are experts in their respective fields, have made a commendable job of describing the steps taken in this field by some of South-East Asian Countries and have also ably delineated the magnitude of Indian problem by studying in depth the slow change in per capita income as against rapid increase in population. None can deny that a national population policy is one of India's first imperative. The information about the measures taken by the State Governments to implement the policy and the organisational structure constructed for that purpose, is elaborate and exhaustive. One may not, however, wholly agree with the authors when they say that the policy implications of the new package were utterly disastrous' to its objectives and that the response to the family planning programme which had been coming over the years was reasonable. It is a known fact that the response and progress in this direction was not satisfactory, otherwise there was no necessity of the new package, setting up of targets, non-fulfilment of which meant warning, censure stoppage of increment and even discharge of Government, public sector or local body employees were, of course, too pronounced to be brushed aside. Denial of contractual obligation like TA on transfer could hardly stand legal examination.

The Chapter on "Organisation and Administration" highlights the flaws of the policy and its actual implementation at the grass-root level. A reading of the chapter, at times, leaves an impression that the publication is not a study as claimed by the authors, but is sounds like a report of an Commission or a Government Commission as to what was ailing the system and what corrective measures should be adopted.

The Chapter on "The People—their attitudes and reaction", is a statistical analysis of the talks with persons interviewed and their knowledge about the incentives and disincentives. The concluding Chapt appears to be a patch work in an ostensible attem to bring the book which was written earlier, upto dat and hence certain conclusion impress us as afte thoughts.

The book is highly informative and interesting describing the reactions of different sections of tl society on a subject which is at once personal, socia economic and religious (at least in Indian cont It provides a lesson to the administrators. □

B. S. Jain

A Valuable Study

The Impact of Irrigation on Rural Development : *Case Study by M. P. Pandey, concept Publishi Company, New Delhi*, 1979, *Pages* 191, *Price Rs.* 4

IRRIGATION is an important input of agr cultural development. Its importance cannot l under-rated in an agricultural economy su as ours. Development of proper irrigation facilitie areas which remain dry or waterlodged throughout tl year or which do not have any such facilities a have to depend on rains, helps in bringing larg areas under cultivation as well as in augmenting agr cultural production. Moreover, it also helps in remo ing or lessening regional disparities. A study of ava able irrigation resources in an area, therefore, wou provide an insight into socio-economic conditions the area, its relative prosperity or backwardness comparison with other areas of the State or tl country and over and above, the factors leading prosperity or backwardness.

The book under review is a socio-economic surv of the Kiul—Badua—Chandan Command Area. Tl Kiul-Badua-Chandan Command Area Developme Agency was created by the Government of Bihar wi the realization that the irrigation potentiality creat in various irrigation projects remained far from fu and optimum realization.' The author has survey six villages, selected on the basis of purposive sam ling, and studied their household characteristics, lar holding characteristics, irrigation, cropping pattern ar employment, income and indebtedness. The selecti of the villages was made by the Agency itself ar the author admits that they were not representati at all.

Starting with this initial handicap, the author seer to have overcome it later. The study provides usef insight into the agricultural pattern and socio-econ mic conditions of the area. Pandey deals at length wi the causes of relative backwardness or prosperity the area studied. The book is not merely diagnost in nature, it discusses remedial measures too. T study is quite rich in data and should be of gre help to researchers in the field.

Ajay K. Mehr

Letters

A House wife's Cry

Sir,

In your issue dated 16-6-79 the article "Pay Rs. 15 only, Take Home a Fridge" was published. As a housewife may I ask the Principal, Central Village Pottery Institute, Khanapur who produced the same, that how they developed the fridge in the form of a pot? Why they could not or have not made it like any other fridge? Even in villages our people are eager to have a standard fridge like Allwyns, Kelvinator etc. and not a pot. As you know pot is a symbol of poverty. If a villager is really poor, then he has nothing to keep in a fridge. Whatever he has, he has to eat. Then a person who wants to store something for tomorrow must have crossed that "pot—poverty" level and so, hates to see a pot. He thinks of a standard fridge only. So the Institute people must device an instrument which is almost like any other fridge but cheaper.

Usha Verma
New Delhi

Basic Information Centres.

Sir,

I am glad to read the article "National Information System for Planning" by Shri Dinesh Mehta in 16, April 1979 issue. It is the right time to establish a National Information System for planning. But Shri Mehta has concentrated on the apex body of the National Information system, namely the NIC. It is some thing planning for the construction of a multi-story building without the required foundation.

Unless the Basic Information centres are properly organised in Scientific way with proper professional manpower, the NIC will be nothing but another store-house of the present inaccurate informations, initiated from the outdated records of the village officers.

I propose the planning commission to appoint a committee to prepare a 'Master Plan' for the whole country for setting up a sound information system from Basic Rural level to NIC level.

A. Ibrahim
Madras

Poverty............

(*Contd from page 26*)

fall. The latest amendment raised the minimum marriage age from 15 to 18 years for girls and from 18 to 21 years in the case of boys. This does not seem to be reasonable enough. It should be 21 years for girls and 25 years for boys. People should be made to strictly adhere to these ages of marriage.

To reduce income disparities and to prevent any further concentration of wealth and economic power in few hands, the following suggestions can be considered.

(i) Provision of National Programme of Minimum Needs.

(ii) Provision of productive employment opportunities, more in the rural areas and make the maximum productive use of the 2,000 million man hours.

(iii) Conversion of costly and fruitless education system into a cheap and productive one.

(iv) A comprehensive scheme for the welfare of low income groups of all castes.

(v) More production and supply of day to day consumer goods.

(vi) Control on unnecessary and showy consumption of the richer classes creating social motivations.

(vii) More expansion of public sector in field of production having labour incentive technique.

(viii) Efficient and democratic management of the public sector enterprises, so that they may yield more surplus which can be reinvested for further improving the production.

(ix) The foreign policies which impede the Industrial or rural growth rate should be scrapped.

(x) Indirect tax system should be re-structured so that the tax-induced inflation and erosion of money income is considerably reduced.

Poverty, in a large country like India, is a huge problem. Its removal is still a bigger task. It will need decades of strenuous efforts and considered rise in output and rate of economic progress before it is eradicated. Meanwhile the country can-not sit quietly and hopelessly. Fortunately our Government is aware of the magnitude of the problem and with honest and hard work it may be possible to remove poverty within a reasonable period of time.

Loktak hydro-power project



Pen Stock Pipes being positioned at the Project Site

THE next generation of hydro-power projects in India would be in the Himalayas. A foretaste of the problems in venturing into the relatively young and still developing geology of the Himalayan region is available at the Loktak hydro-power project in Manipur. The project has progressed from problems to problems during its nearly eight construction years.

One of the biggest fresh water lakes, Loktak, is being tapped to divert a meagre 42 cumecs for power generation and 16.8 cumecs for lift irrigation. It would generate 105 MW of power, provide irrigation to 23,000 hectares, and reduce flood levels in the lake.

The water from the lake is to be taken through a 10.27 kilometre long water conductor system. Of this, 6.51 kilometre length would be the head-race tunnel passing through Naga hills. A 35-kilometre long transmission line will carry the power to Imphal. The latest estimates place the cost of the project at Rs 8.262 crore. The execution of Loktak has been entrusted to the National Hydro-Electric Power Corporation, a public sector unit since 1977.

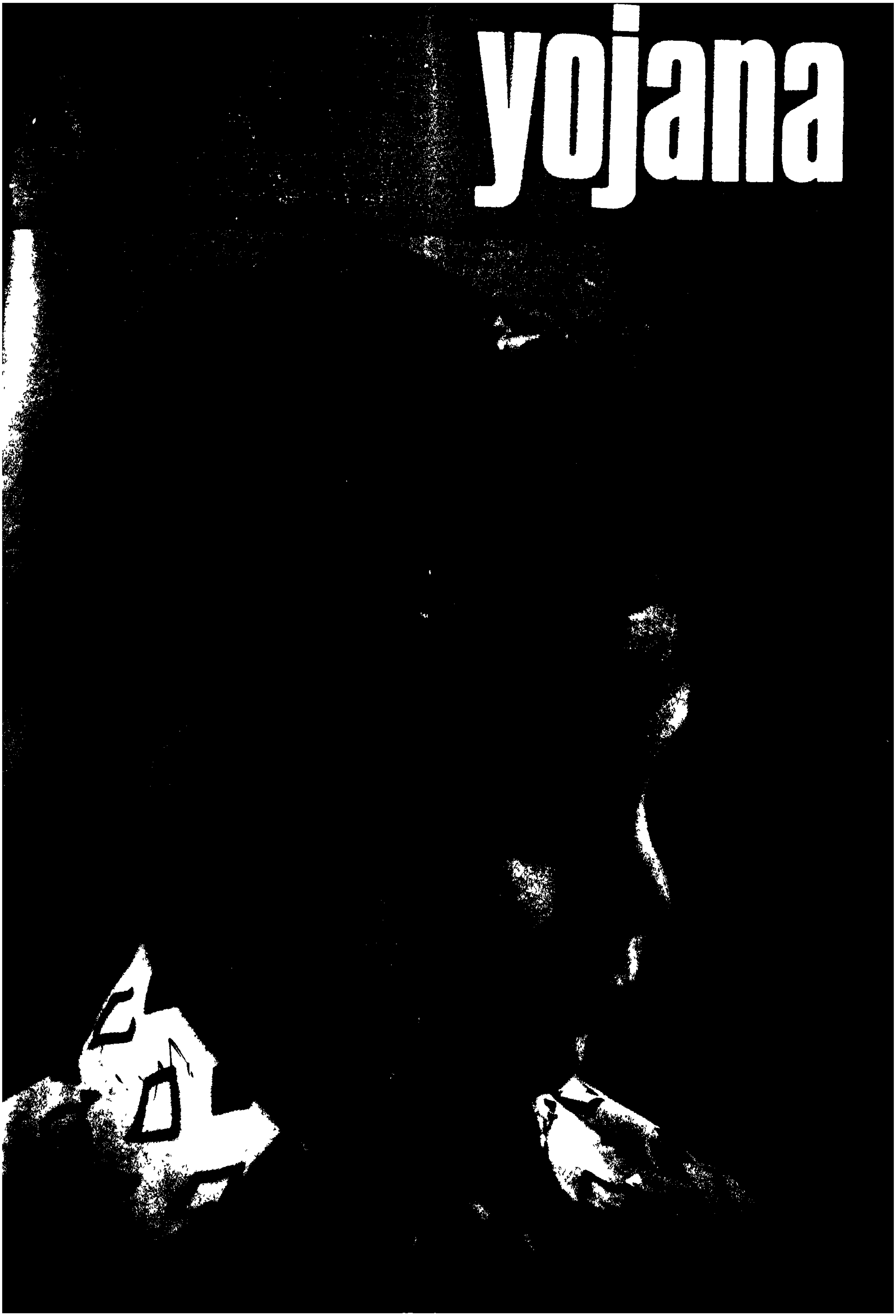
Loktak is the first hydro-power project whe tunnelling is being done in gaseous strata with fu mine safety precautions. In place of an ordinary electr light costing about Rs 20, flame proof lamps costin over Rs 600 each have been installed. All minin equipment is flame proof.

For tunnelling a sophisticated miner, called th Alpine Miner, has been installed. Besides tunnellin six metres length a day, it simultaneously removes th muck on a conveyor system.

This technique is expected to save on time costs. The project is installing a second Alpine M Loktak would be a trail blazer in speeding up const tion of hydro-power projects.

Loktak hopes to brighten lives, in Assam, Arun Pradesh, Manipur, Mizoram, Meghalaya and Tr by March 1982. It would be a precursor to many projects in the Brahmaputra basin, which holds per cent of the country's total power poten Relatively, the cost of power generation in Lakta one of the lowest also about 15 paise per unit.

Printed by the Manager Govt of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division Patiala House New Delhi-110001


yojana

Words that Inspire

If the State is looked upon as the sole agent of reconstruction of society we get nothing but a regimented society.........and the individual is made a cog in a vast inhuman machine............Democracy requires that the people should depend as little as possible upon the State.

*** *** ***

Though long was the night of slavery and arduous the struggle for national emancipation, we never looked deeply into the basic problems of our people. It is the chronic indifference that has robbed the dawn of freedom of its glow. The caste stratification of our society, backward and lopsided development of our economy, the stubborn demographic and ecological problems—those of over-population and natural poverty—are so many challenges to our march, towards socialism that have not received the concentrated attention they de-deserve......... The absence of cultural homogeneity and lack of social mobility are the two stubborn facts of our social life.

*** *** ***

To the extent man advances from war towards peace, to that extent and no more can he claim to be civilised, no matter what religion or ideology he professes, how advanced he is in science technology, in propriety and so-called culture and sophistication.

*** *** ***

I love village life and would any day prefer to live in my own village than, say, Patna or Delhi. But in spite of this partiality I must confess that the socio-economic reality in the village, on a close examination, is ugly and distressing in the extreme.

*** *** ***

Ours is not a Trade Union approach, our aim is not to divide the community and set one part against the other, but to integrate it and, by creating community consciousness and sense of mutual responsibility and by bringing together the different conflicting interests that are really interdependent into mutual confrontation in the village parliament, to set in motion a process of resolution of conflicts and problems by mutual adjustment leading to a juster and better social order.

*** *** ***

Defections are political corruption and fraud on the electorate. They are jeopardising the democratic fabric. It should be made necessary by law for an MLA changing party to resign his parliamentary seat and stand for re-election.

*** *** ***

The gravity of the people's problems has crossed its limits. Many are starving, the problem of unemployment is acquiring disastrous proportions and those who are launching an agitation to protest against the government's failures are being dubbed as fascist and reactionary forces.
Nothing short of fundamental change in the system can cure the chronic disease.

Jayaprakash Narayan

YOJANA

Volume XXIII Number 2
1 November 1979
10 Kartika 1901

Published on behalf of the Planning Commission n Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. Telegraphic Address: Yojana, New Delhi. Telephones: 383655, 387910, 385481 (extensions 373, 402 and 420) Circulation : Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs. 30 Three Years—Rs. 42. Foreign Subscription: One year £ 2.70 or $ 5.00. Two Years—£ 4.50 or $9 0 Three Years—£ 6.30 or $ 12.50. Single Copy £0.12 or $ 0.25.

Editorial

Many Promises to

IT IS heartening to learn that the World Food Programme has agreed to give our country about 107,900 tonnes of soya fortified bulgur wheat and 12,600 tonnes of butter oil for on-the-spot cooking and feeding of about 1.7 million children below six years and 250,000 pregnant and nursing mothers who are suffering from protein calorie malnutrition. This supply is in addition to the 142,532 tonnes of soya fortified bulgur wheat, butter oil, whole wheat and dried skimmed milk that WFP has already supplied or agreed to supply. With this assured help the Ministry of Social Welfare will be able to continue its supplementary nutrition feeding project, the largest of its kind in the world, until about August 1982.

The prevailing Indian situation in relation to child health reflects a woeful inadequacy of achievements and leaves out immense ground to be covered. It is not easy either to meet the health and nutrition needs of the children in the age group 0-6 who constitute 21 per cent of the total population and of women in the age group 15—45 constituting about another 22 per cent Only a small percentage can be reached in view of our resource constraints and differential degrees of ecological deprivation. Preferences and priorities have necessarily to be given to vulnerable areas, backward sectors of society such as urban slums, drought affected regions and areas predominantly inhabited by scheduled castes and tribes. Even within the limited spheres the number to be tackled is almost frightening. It has been estimated that out of 115 million children (1971 census) between the ages of 0—6 years in India at least 46 million are below the poverty line. Of them 9.2 million live in urban slums, 2 8 million in tribal areas and 34 million in rural areas affected by drought, flood and other hazards of marginal existence.

The guidelines in the action programmes of the International Year of the Child are clear. The year is intended to be "a spring board for continued and vigorous action during the residual part of the country." A large number of tasks call for such action. Child mortality and morbidity will have to be reduced along with maternal mortality. Adequate maternal and child health care services will have to be ensured besides providing basic health and nutrition services to children and pregnant and lactating mothers. The objective of providing free and compulsory education to all children until they complete the age of 14 as envisaged in the Constitution of India has yet to be achieved. Children of working villagers, destitute child and handicapped will have to be given special consideration. Although there are a number of legislations to safeguard the interests of children, effective implementation is urgently called for. Public opinion has also to be created in favour of new and progressive legislation concerning adoption of children, juvenile delinquents, and universalisation of elementary education. The plan for the child will have many miles to go before the promises made to the country's future can be turned into realities. ☐

Child Welfare And Development In India

B. Chatterjee

Director, National Institute of Public Cooperation and Child Development and

Anupama Rao

Specialist (Child Development), National Institute of Public Cooperation and Child Development

ACCORDING TO THE 1971 census, there were 30 million children in the age group of 0—14 years, of which 115 million are in the vulnerable period of 0—6 years. Of these, about 40 per cent or 92 million live below the poverty line which do not assure them even the basic minimum requirements for survival. Moreover, about 40 per cent of all deaths occur in the 0—5 age group and in estimated 5,000 children below five year of age die in a single day. This high rate of child mortality can be mainly attributed to the twin causes of malnutrition and dehydration due to diahorrea, both of which are linked to economic deprivation, insanitation and ignorance. Morbidity in childhood has also assumed staggering proportions with 60 per cent of children in the 0—6 age group suffering from malnutrition and facing the danger of permanent blindness due to vitamin A deficiency. This vulnerable section of the population which is most in need of intervention services is to be found in teeming urban slums, inaccessible tribal tracts and natural calamities. The problem of providing this child population with basic facilities for survival within existing resource constraints is further aggravated by an alarmingly high rate of increase in the population. For instance in terms of geographical areas, Australia is about 2½ times as large as India, but in terms of population we add an Australia every year to the already existing numbers. When these factors are considered, one can conclude that the IYC comes at a most opportune moment, for unless all children born have a fair change for survival, people would hesitate to adopt small family norm. It is also in the fitness of things that the theme of the IYC in India is to be "reaching the deprived child."

The year 1979 has been declared as the International Year of the Child (IYC) with the aim of focussing attention on the needs of children all over the world by providing a framework for advisory on behalf of children and creating an awareness of the special needs of children on the part of decision-makers and the public. It is also envisaged that the IYC will help in the recognition of the need for integrating child welfare and development programme with long-term and short-term economic and social development plans on an international and national level

The specific objectives of the IYC in India and the National Plan of Action for its observance are best understood in the context of the development of services for children in India.

Constitutional Directives

The Constitution of India, in Articles 24, 39 and 45 outline the nation's duties and responsibilities towards her children. The Constitutional directives provide for the protection of children against abuse, exploitation and moral and material abandonment, provision of free and compulsory education and prohibition of employment of children in factories.

The Government has since Independence been actively and increasingly involved in efforts to realise these Constitutional provisions. In the First Five Year Plan a sum of Rs. 40 million was ear-marked as the outlay

for social welfare. The first Five Year Plan expressed that "considering the numbers involved the needs of children should receive much grater consideration than is commonly given to them."

The Second Plan again reiterated that voluntary efforts in the field of social welfare needed to be revitalised and stressed the role of the Central Social Welfare Board and its state counterparts, viz. the State Social Welfare Advisory Boards, were given the main responsibility of doing so The Plan outlay of Rs. 190 million was mainly allocated for Welfare Extension Projects and on strengthening and expanding institutional provisions for handicapped children. The plan outlay for the Third Five Year Plan was increased to about 163 per cent for social welfare compared to the previous plan which amounted to Rs 310 million In addition to the continuing projects and programmes initiated in the Second Plan period, new projects were introduced. These included new pre-school education schemes, training programmes for child welfare workers and the starting of pilot Integrated Child Welfare Services Demonstration Projects which were to offer the necessary services to children in the age group of 0--16 years in an integrated manner by establishing inter-sectoral linkages

Significant developments occurred in social welfare during the Inter-Plan period and the Fourth Five Year Plan. The need for strengthening the social welfare sector and providing for counselling and advisory services, monitoring, improved management and supervision, and adequate inter-sectoral coordination was emphasised. Attention was also focussed on destitute children and provisions were made for institutional and non-institutional facilities for them A major fillip was given to child welfare services with the adoption of a National Policy for children in August, 1974 and the constitution of a National Children's Board later in the same year

The National Policy for Children, recognises that the nation's children are a "supremely important asset" The identified Programme priorities in the National Policy include preventive and promotive aspects of child health; nutrition for infants, children in the pre-school age and nursing and pregnant women; maintenance, education and training of orphan and destitute creches and other facilities for the care of children of working/ailing mothers, and care, education, training and rehabilitation of handicapped children. The Policy further outlines specific measures for the attainment of these objectives. The National Children's Board has been constituted to provide a forum for planning, review and proper coordination of the multiplicity of services for children and to give a focus to child welfare and development services. The Board functions under the Presidentship of the Prime Minister of India.

Integrated Child Development Scheme

These developments have yielded significant increased outlay for social welfare, diversification of programmes and schemes for children, and improved management and coordination during the Fifth Plan period. The Fifth Plan outlay for social welfare was Rs. 2018 million which is over 460 per cent of the outlay for the previous plan The programme and schemes in operation during the Fifth Plan period were the Integrated Child Development Services Scheme, Scheme for Creches for Children of Working/Ailing Mothers, Balwadi Programme, Welfare Extension Projects, Schemes for the Integrated Education for Handicapped Children, Scheme for Welfare of Children in Need of Care and Protection, Scheme of Foster Care Services, Aurobindo Bal Kendras, Holiday Camps for Children, Nutrition Programmes and Special Child Relief Programmes The Integrated Child Development Services Scheme started in 33 blocks (now extended to 100 blocks) on an experimental basis in 1975 has been planned to deliver a package of services in a coordinated and integrated manner.

The objectives of the scheme are to improve the nutrition and health status of children below six years of age; lay foundations for proper psychological, physical and social development of child; reduce incidence of mortality, morbidity, malnutrition and school drop-outs, bring about effective coordination of policy and implementation amongst various departments to promote child development; and enhance the capability of the mother to look after the normal health and nutritional needs of the child. The package of services provided in the scheme include immunization, health check-ups, and referral to all children in the 0—6 age group and all pregnant and nursing women, supplementary feeding to 40 per cent of the above mentioned beneficiaries, pre-school education to 50 per cent of the pre-school population and functional literacy to 100 per cent of the female population in the age group 15—44 years to be achieved progressively.

The brief overview of programmes and policy in the school welfare sector, attempted earlier, are indicative of a number of positive trends which need to be highlighted. In the first instance, plan allocations for the social welfare sector have been successively increasing and in terms of the Rupee outlay, the Sixth Plan figure of Rs. 3050 million is about 76 times that of the outlay

in the First Plan. The second point which is worth noting is the identification of traget groups and beneficiaries who are most vulnerable and are in greatest need of intervention services. Whereas in the earlier schemes, welfare services attempted to cover children in the age range of 0—16 years and their families, in the ICDS scheme the definition of the target group has been narrowed down to the 0—6 age group and pregnant and lactating women. Further these populations in urban slums, rural areas and remote tribal areas have been identified as the most deprived and therefore the most in need of services. Thirdly, the objectives to be achieved have also shifted from being global in their perspective to more tangible and specific in the later programme, a change that is more conducive to better implementation of the programmes and greater achievement of the objectives. Even among the objectives of the I.C.D.S. Scheme, for instance, relative priorities have been established and it has been acknowledged that health and nutrition services and support services to these like health and nutrition education are of paramount importance.

A more extensive coverage of the beneficiaries is also being attempted. For instance a typical Welfare Extension Project would have five multipurpose centres with each centre catering to five villages. The functionaries included five gram-sevikas, five craft instructors and five dais per project. In the FCW (Family Child Welfare) programme, the number of functionaries was increased to twenty trained workers who consisted of two mukhya sevikas, one *griha sevika*, six *bal-sevikas* and *balsahayakas* from social welfare and one *mukhya-sevika* and two gram sevikas from the community development block. The services were to be delivered through an infrastructure consisting of a main centre (which included a *balvikas kendra* (child development centre) and a *griha kalyan kendra* (women's welfare centre) at the block headquarters subcentres in key villages in the block serving as balvikas kendras with provision or extension services for women's welfare, and aided sub centres run by local *mahila mandals* or voluntary organisations. Given the population of the block on the one hand and the number of centres and functionaries on the other, it is evident that the coverage of the beneficiary population in these programmes would be limited to certain scattered pockets in the block and consequently not extensive. In contrast in the ICDS scheme, there are adequate provisions both in terms of functinaries and centres to make feasible the coverage as outlined in the scheme. For instance, for a rural block of population 100.000, 100 *anganwadi* centres with one anganwadi worker and one helper per centre, five supervisors and one Child Development Project Officer have been ear-marked, the total number of functionarie (excluding health functionaries) for the block bein 206. Moreover, the number of functionaries for eac project has not been uniformly fixed but is left flexibl and calculated on the basis of the population. Suc an approach consequently, makes for full realisatio of the programme targets and ensures an extensiv coverage of the area being serviced.

Finally, it is encouraging to note that the emphas has shifted from a sectoral approach to an integrate one, wherein intra and inter-sectoral integration is be ing systematically attempted in current schemes. Th important of the role of research, evaluation an monitoring in improving the cost-utilisation ratio i schemes has also been acknowledged and monitorin and evaluation are an in built component of maj schemes for child welfare. A sum of Rs. 41 5 millio was allocated for planning reseach, training and evalu ation in the Fifth Plan Outlay and has been increase to Rs. 42.9 million in Sixth Plan. It is evident, there fore that welfare services in India, particularly thos related to child welfare have made significant stride in the last three decades. Yet, when one compares th existing coverage vis-a-vis the present child popula tion in need of services, it is obvious that the task i still incomplete.

Specific Objectives of IYC

The specific objectives for the observance of th IYC in India are-"to make concerted efforts to signi ficantly reduce the incidence of maternal and chil mortality and morbidity by providing effective pro grammes and services for their health and nutriti na needs ; promote community awareness and educatio about the crucial importance of the healthy develop ment of the child and a happy family life as th foundation for the child's security and well-being facilitate optimum psycho-social development of pre school children so as to prepare them for schooling b providing a network of *balwadi|anganwadi|creches|day* care centres|nursery schools ; strive for the speed realisation of the goal of universal elementary educatio and substantially reduce the rates of school drop-out secure the basic right of children and protect them against neglect, cruelty, hazards and exploitation by promoting effective implementation of existing legisla tion enacting new ones where necessary ; and secure entitlement of all children in poverty groups born o after January 1979 to public assistance for their surviva growth and development.

The National Plan of Action for IYC initially draft ed by National Institute of Public Cooperation an

Child Development and accepted by the National Children Board which outlines the approach strategy, specific programmes and operational guidelines to be followed. The approach strategy has been indentified taking into consideration the resource contraints and differential degrees of ecological deprivation It has been recommended that the IYC should not be construed as one year programme, but should be viewed as a spring board for vigorous and continued action during the residual part of the century. The pressing need for operationalizing the goals and objectives to be achieved, both long-term and short-term, and evolving a perspective plan for the following two decades of the century which have to highlighted

Keeping in mind the objectives and approach strategy for the IYC, concrete measures that need to be undertaken in the fields of health and nutrition, education including preschool, elementary and community education, social welfare, legislation, publicity and fund raising have been outlined.

Health and Nutrition

The measures suggested in the area of health and nutrition include promotion of the preventive aspects of health by expanding immunization programmes in rural and tribal areas by using all child welfare and educational institutions and health centres as focal point for conducting immunization programmes and involving private practitioners and voluntary organizations in these activities Strengthening the health infrastructure by achieving the long-term goal of having one PHC for every 35,000 to 40,000 population and one sub-centre for every 5000 population, expanding the community Health Workers Scheme and the Multi purpose Health Workers Scheme reinforcement of maternal and child health services and school health programmes have also been stressed. The measures suggested also include improving the training given to all personnel and functionaries dealing with health and nutrition, and producing support materials like manuals, aids, etc. The importance of environmental sanitation and clean and safe water supply has been underlined.

In the field of nutrition, the Plan envisages the expansion of existing supplementary feeding programmes and integrating them with health and welfare services, promotion and integrating them with health and welfare services, promotion of production of low cost nutritious food through kitchen gardens, school gardens, etc., preparation and dissemination of resource materials on nutrition, promotion of nutrition awareness and education in the community and the undertaking of research in relevant areas to streamline methods of identification and treatment of "at-risk" children, administration of schemes and measurement of benefits. These measures have been suggested with a view of reducing maternal and child mortality by five per cent. Emphasis has also been laid on family welfare to ensure proper family welfare services and proper preparation of boys and girls for wise parenthood.

Education

In the field of education specific measures for providing primary and elementary education to all children, particularly from the weaker sections of the society, free of cost, by involving local bodies, providing incentives and developing different educational models to suit local needs (for example having split hours mobile schools, etc.) have been outlined. The necessity of producing low-cost appropriate educative and play materials for children, improving teacher training programmes, making provisions for pre-vocational training has also been stressed. Community education, particularly of community leaders and policy makers has been considered to be an integral part of the measures to be followed to strengthen the field of child education and reduce wastage and stagnation rates in schools.

Supportive welfare services to be provided to children who, due to handicaps of a social, economic, physical and/or mental nature, are unable to make optimum use of the facilities provided by the community have received special attention in the National Plan. Those needing such services have been identified to be children of working|ailing mothers, destitute children and handicapped children in poverty groups. The child population below 6 years/with working mothers in urban and rural areas is estimated to be 2 million and 16 6 million respectively. Expansion of existing day-care centres and creches and evolving new patterns of care have been suggested to meet the needs of these children. Provision of institutional and non-institutional services with an emphasis on non-institutional preventive masures, promotion of adoption and foster care services, and expansion of innovative and effective models of institutional services has been made to meet prevent the exposure of the etimated one million destitute children in India to moral and physical hazards. Measures to be taken in the case of handicapped children in order to promote their assimilation in society have been handicapped. provision of facilities for integrated education, production and circulation of literature related to handicapped children, strengthening of training and evolution of effective models of

16 DPD/79—2

health care and education. **Research documentation is also to be undertaken to provide the necessary base line information and focus to programmes.**

A multipronged approach is suggested in the field of **legislation to promote** community awareness on the **need for understanding** and effective implementation of all existing child legislations and create public opinion in favour of new and progressive legslation. The need for introducing suitable legislations for Adoption, the Children's Act (which provides for the needs of neglected destitute and delinquent children and the review of the needs of neglected and delinquent children) in those states where it has not been enacted, and for preventing child labour has been stressed. It is also recommended that during IYC legislation related to equality and non-discrimination in respect of persons born out of wedlock be enacted and existing legislation like the Shops and Commercial Establishments Acts, Apprentices Act, Mines Act, Factory Act, Minimum Wages Act, and Equal Remuneration Act be effectively implemented in letter and spirit.

Mass Media Utilisation

In order to propogate the cause of the child and create public awareness during the IYC, the mass media is to be used extensively, and programmes highlighting the needs of children are to be covered by radio, TV, films, magazines and newspapers, etc. Realisation of the objectives of the IYC and implementing the programmes outlined in the National Plan would involve considerable financial inputs. To generate the necessary financial resources for voluntary action in the field, a National Children's fund is set up at the Centre with similar funds at the state levels. It will be a standing fund to be utilised by volunaary organisations for providing child welfare services.

Operational guidelines have been laid down for implementing the National Plan in which the responsibilities of the various Governmental departments at the state and central level and non-governmental agencies like voluntary organisations, professional organisation and associations etc. have been outlined. In addition, **a recommendation has been made that** state lev **plans for the IYC be formulated within the** framewo **of the National Plan to suit local needs,** and the Plai ning Commission undertake the preparation of a pe spective plan for child development for the peric (1979—1999). But all this cannot be achieved population growth and the number of children boi make it counter productive to child welfare ar child development itself. Any rational and sensib planning for child welfare has to be supported by a celerated efforts in family welfare planning which now recognized component of the welfare package

In India where the vulnerable group of the popul tion (0-14 years age group and pregnant and lacta ing women) amounts to **about 64 per cent** of the tot population, the plan outlays on the social servic sector comprised of education, health, the welfare backward classes and housing and social welfare a count for only 13.5 per cent of the total plan outla while in more developed countries the correspondi figure is about 25 to 30 per cent. It is paradoxic that in most developing countries, where the propo tion of dependent and vulnerable sections of tl population is large, the prevailing socio-economic coi ditions are inadequate and the need for interventic is paramount, there is no corresponding emphasis financial outlays. Yet one cannot deny the urgency the problem and the necessity of bringing out a chan in the existing priorities cannot be over-estimated. Tl problems of lack of availability of resources for tl child development and welfare has to overcome, b cause the essential question is the development of tl greatest and most important of resources, that human resources. Investment in the children tod must be viewed not only on humanitarian and mor grounds of fulfilling the nation's duties towards h dependents, but assumes a significance even on purely pragmatic level: If India is to develop and pr gress into a self-sufficient and stable country it is ir perative that her future citizens be provided a fa chance of physical, social and psychological surviv Furfilment of their basic needs would not only ac to the economic development of the country but wou also contribute to its stability, cohesion, growth ar prosperity. Let us then help, guide and enable tl child to survive, grow and develop to his fullest st ture to serve as the architect of India's future destin

If India is to develop and progress into self sufficient and stable country it is imperative that her future citizens be provided a fair chance in physical, social and psychological survival



Indian Children

T. S. Satyan
Free lance Journalist

WHAT IS IT to be a child in India ?

Some 5,000 years ago there have been many kingdoms and epochs—some of them are most magnificient of their time : they have left us a legacy of sculpted wonders, a rich literature and monuments of inimitable beauty and grandeur At the other end of the spectrum, there was also neglect, exploitation, injustice and misery. The children of India are thus heirs to ecstasy as well as agony.

Right from the beginning of recorded history, we have had legends, myths, art and literature celebrating the purity as well as the pranks of childhood. Thousands of songs and tales deal wih the frolics of the Divine child Krishna. One of the greatest plays of India, written centuries ago, by the Indian poet, Kalidasa, is about a child and its clay cart.

Everychild grew up with a simillar toy as the plaything—a small bull made of wood and [illegible]

on a platform with four wheels to which the child would attach a long string and pull it around gleefully in the lanes and bylanes of the residential areas. Friends would follow with similar toys. At twilight the child would return home to have hands, feet and face washed by mother. She would put a tilak—a holy mark—on the forehead and shove into a small room reserved for the idols of gods and goddesses where the child would innocently close eyes in an effort to pray !

Then would follow a meal in the company of family members, with mother rolling little balls of rice mixed with vegetables and gravy which she would lovingly put into the hand goading the child to eat—always a little more than wanted. Later a pleasant half an hour with grandmother who would narrate stories from the epics—the Ramayana and the Mahabharata These stories learnt in childhood have kept history and tradition alive for all even to this day. Most people have had childhoods of similar type.

Abundant love for the child has been a sign of all civilizations. Jesus Christ said : "Suffer the little children to come upto me, and forbid them not, for such is the kingdom of God". And in the words of the poet Wordsworth : "Heaven lies about us in our infancy". Into such a world of childhood, we were born. And, during the International Year of the Child, we pay homage to children not only of our country but everywhere in the world.

In India the child is regarded as one totally incapable of sin. Indian tradition ordains that we consider a child below five as an incarnation of God. Yet we find ourselves struggling against a widespread apathy to the suffering of children. Incapable of sinning, they are sinned against.

Duties Taught at an early age

Still, there is a silver lining to their lives. Indian villages may be poor, yet the children play and laugh, with beaming and bright eyes. They may be scantily clothed, yet groups of them romp across hills and dales, singing folk songs, plucking mangoes, fruits and getting a thrill as they bite into their sour-sweet kernels. They learn the family crafts from their elders, make pots and pans and other artifacts that have the inimitable touch of India's rural aesthetic genius. They learn self-reliance at the young age. Most rural Indian families are joint families—with several generations living together—and providing a sense of security and belonging. The old have the company of the young and the very young have t company of the old. India's children are not emoti ally deprived. This also fosters a sense of obligati to others from a very young age. This must one of the reasons why the people of India among the most hospitable and warm-hearted ar where in the world.

God loves the poor, it is said. And that is how in India have so many of them! To many, Ind summons up the picture of a poor country. One our diplomats, Krishna Menon, used to say that Ind is really a rich country which happens to be inhabit by poor people. Very recently, while honouring son 14 India-born Americans at Weshington, Mr. Na Palkhiwal, our then Ambassador in the great count said that India is a poor country in economic term but rich in intellect, skills and the spirity o enterprise.

Yes, I have learnt to read and write



Two hundred years of foreign rule and many centuries of feudal domination that preceded it, caused poverty. Some may or may not know that at the end of British rule, the proportion of people dependent on the land increased and of those dependent on craft and industry decreased. The country have more than half a million villages It is only during the last 30 years that the ordinary people have come into their own, thanks to the valiant, non-violent and domocratic struggle for independence waged under the leadership of Mahatma Gandhi.

Poverty Persists with Plenty

What has happened in India during the last 30 years ? Most foreigners have unfortunately been fed with pictures of India's poverty, of a nation inhabited by ill-clad, underfed humans living in a state of decay and neglect India is poorly understood and not sufficiently appreciated for being the fantastic and fabulous society it is. It can be exasperating It can also be exhilerating The dichotomies of rich and poor persist So does the struggle to remove them

Indian children who, dispite poverty, have faces that exude a sense of quiet dignity They are happy, playful kids living and growing in beautiful surroundings. Any sensitive person visiting India cannot fail to be struck by the beauty as well as the burden of our country today

While viewing poverty in India, anyone will also notice the super-human effort to overcome poverty and to assure a better standard of life for our millions The biggest achievement in our country is to have established a massive working democracy—the biggest in the world. We also have some outstanding economic achievements to our credit. We have doubled our food production. Our industrial production has increased several times since independence Today, we rank among the first ten nations in the world in industrial output Our life span has gone up from about 30 years to the present 54- years—a considerable achievement in one generation.

How has all this come about? By our sincere efforts in controlling epidemics Through more and better medical facilities especially in the rural areas. Through education and through the beneficial results of increased agricultural production and industrialization.

Educated have begun to realise their responsibilities to society. Take for example the family welfare planning programme. In my case, I am the eldest in a family of 15 children. And all my brothers and sister —thanks to education and enlightment—have realisec the need to restrict our families so that we may give our children a better standard of life. I have three children—two boys and a girl. My brothers and sisters have no more than two children each And all of us have taken care to see that we don't have any more !

It will take time before the majority of fellow—men, especially in the rural areas, become equally aware of their responsibilities But we are making determined effort to achieve desirable goals

Talking of medical facilities alone, anyone can imagine how difficult is our task—a task common to al developing nations The most advanced and affluent in the world are finding it difficult to provide adequa medical facilities to every one Difficulties, problem and the great burden imposed on India in terms o money and other resources are enormous. Yet, we have embarked upon a nation wide crusade to provide primary health care. This is a programme based on ou credo of self-reliance, working for the people, throug the people.

Success Amidst Sufferings

Our villagers themselves are being trained as com munity health workers. Already 75,000 of them are i the field, preaching hygiene and providing basic healt care-both curative and preventive—to some 75 millio villagers. By 1983 there will be over half a millio of these community health workers serving the rur people—at least one trained paramedical worker fc everyone of our 564,000 villages. This is low-cost car but to make it spread nation wide is a gigantic tas This massive programme is the largest initiative in an democracy in the world. It ranks second only to th Chinese 'barefoot' experiment in terms of size

Our success in combating health problems has resul ed in the natural growth of our population. With in proved health facilities, our population has gone u by some 250 million during the last 30 years. Th growth would not have been there if we had let t epidemics to go unchecked. However, in those stat of India where the majority are educated, where rur health services are the order of the day, the birth ra has gone down In the meantime, one million childr are added to the population every month because t base in India is very large Everything in the coun is on a massive scale!

What do we mean when we use the word progre Essentially that our children should live better, t us.

We have initiated new laws for a variety of child welfare services. According to our last census 16.6 million rural children and two million urban children under the age of six years have workig mothers. A good beginning has been made in providing day-care facilities for these children. We have some three million handicapped children, mentally retarded or blind or deaf or orthopaedically handicapped. The existing facilities can cater only to 10 per cent of these children. In addition to this the other problems relating to health, nutrition, education and the like which, together, present a canvas of colossal challenges calling for colossal projects aimed at and executed for the well-being of our children. Our task is by no means done. It is just the beginning.

In facing such a stupendous task, India is not living in isolation. This is a task that is common to all the developing countries of the world, who between them, account for some 800 million deprived children. In the words of Mr. Henry Labouisse, Executive Director of UNICEF: "In a number of developing countries, the situation of children has improved somewhat, thanks to better harvests, the limited global recovery and a higher priority for services for children. Both nationally and internationally there have been some new policy initiatives emphasising social development. However, any optimism is tempered if not cancelled, by the sheer magnitude of the intolerable conditions which still prevail for many millions of children".

There is need, therefore, and also a sense of urge for collective action on the part of the world's pe And their sympathy and action should not stop at tional frontiers alone.

Truth sometimes, they say, is bitter. In India lives of children are both bitter and sweet. To deprived children of the world, the developing nati have a lot of love and affection to offer but little c One of the most moving experiences in our lives is look at an emaciated child with eyes glowing with se life and some hope ! How can all our concern and s timent help such a child ?

A hungry child crying for food, an untended disea infant, little boys and girls braving out their lives v hardly anything to eat, stab us with guilt. And we all mankind is guilty.

Every child is everybody's child! No child can be somebody else's child. When we look at children feel the weight of the adult world's responsibility their future. But we also regain our own childh vision and we are revived and strengthened by its se of wonder, joy and hope ! □

KIRTI CHAKRA FOR TEENAGER

IT was 31st March, 1979. The glittering Durbar Hall of Rashtrapathi Bhawan was packed with high ranking military and civil dignitaries. President Sri N. Sanjiva Reddy was decorating recipients of awards and recognitions for distinguished services and gallantry in the Armed Forces and for outstanding display of courage by civilians at an investiture.

The Darbar Hall reverberated with applause and prolonged cheers. A 14 year old village belle Bina walked up in quick steps to the President, to receive Kirti Chakra medal and the commendation. The Kirti Chakra is next in importance to the Param Vishist Seva Medal. According to the citation Kumari Bina of Asuda village in Uttar Pradesh displayed conspicuous courage and undaunted determination.

Kumari Bina brandished a pounder and charged two decoits who shot at her father. One of them died on the spot and the other was overpowered by the neighbours on the night of July 27-28, 1976. Thus their attempt to loot the houses was foiled. □

Big Deposits by little Childr

SMALL Saving collection by the school-g children in Haryana amounted to Rs. 52 l under the Sanchayika Scheme in the y 1978-79. This is the highest pro-rata collectio the country.

Out of six lakh students studying in various sch in the State, 5.20 lakh have participated in the Sanc yika Scheme. Sanchayika is a small Savings B manned wholly by the students. Under the supe sion of the teachers, they work as cashiers, acc tants and managers. The entire banking procedu involved in Sanchayika. The scheme inculcates h of thrift.

The outstanding work done by the students and teachers has given a great fillip to the small sa movement in the State.

The Department of Small Savings, Haryana aw students and the teachers for their outstanding tribution. □

Child Labour
Need for Social Awareness

Vijay Verma

CHILDREN are the blooming flowers of the garden of society and so, it is our duty to protect these flowers from the damaging effects of excessive exposure to heat, cold and rain. They are to mould the future of the nation

A report published by the I L O reveals that about one third of the children, in the age group of 10 to 14 years, in rural areas and one eight of those in urban areas are engaged in gainful employment

Homer Folks, the Chairman of the United States National Child Labour Committee, defines child labour as " .... any work by children that interferes with their full physical development, their opportunities for a desirable minimum of education or their needed recreation". Our former President, Mr V. V. Giri has distinguished the term child labour in two senses First as an economic practice and secondly as a social evil The first signifies employment of children in gainful occupation with a view to adding to the income of the family, and the second, a broad aspect which takes into account the dangers to which the children are exposed which means the denial of opportunities of development.

Article 24 of the Constitution of India, provides that 'No child below the age of fourteen shall be employed to work in any factory or mine or engaged in any other hazardous employment.'

It is considered that the first fifteen years in the life of a child form the most formative age Keeping this in view, the work taken by a father from his child in the field or business for long hours is also child labour. The term can further be explained considering the character of jobs in which the children are employed. Apart from the engagement of children in the fields, which may be a sort of help to their parents, there are children working in the industries as well in all forms of non-industrial occupations which restrain their physical, mental, moral and social development.

Various surveys conducted by the labour bureau reveal that children are employed to do light jobs, such as helping in the fields, in factories for packing, pasting of labels etc., and in match factories, tea estates, bidi manufacturing, printing publishing etc. Unorganised sector empoys a large number of children as domestic servants, workers in hotels, restaurants, canteens, wayside shops, newspaper selling, coolies, shoe-shine boys, vendors etc.

Purposeful Work

Regarding the desirability of work for children there are different views. Some consider that all worl is bad for children because it restricts the opportu nities of mental, physical and moral growth. But if th evil effects of work are minimised, it may improv the growth and health of child. All forms of work b children cannot be considered deleterious. In fac work plays an important role in the development c the child if it involves purpose, plan and freedon The function of work in childhood should primaril be developmental and not economic. Usually the en ployers are of the view that the children who go t work in the early ages become habitually industriou which is profitable for industrialists because they g trained workers at a cheaper rate. But we mu consider if it is appropriate to keep the profitabili of the employer at the cost of physical and ment growth of the child ? It is sympathy and not t desire to exploit, which makes the employer, th argue, engage children in various jobs and also, th

add, that they increase the income of the families of these children as well as save them from becoming lazy and vagabonds and anti-social persons. They may not be exploiting children in a direct way but these are the circumstances prevailing in which the children do not get proper education and guidance that they are being exploited

Child labour on the other hand also increases adult unemployment and reduces their wages Karl Marx in 'Das Capital' observes that "the result of buying the children and young persons of under age by the capitalist is physical deterioration and moral degradation."

Over and above, child labour is the product of circumstances and the exploitation thereof A child at work in the unorganised sector no doubt is better than the other begging at the roadside, but his plight is not considered keeping his future in view.

Various studies and researches have in the real sense added to the piles of records and child welfare has always remained a promise of our government and the leaders. The policies approved by the Parliament have remained a paper solution to the devastating problem Implementation of these policies have not yielded any substantial result barring certain superficial effects In the circumstances there is a need to coordinate and interpret the projects as well as such findings.

Without a healthy public response, the results can differ only to the extent of decimal points A social awareness as such is a must Our decision makers have a greater role to play in illuminating the dark areas of backwardness There is a large number of parents who are indifferent to children's education



About one third of the children, in the age grou 10 to 14 years, in rural areas and one eight of tho urban areas are engaged in gainful employn

They need to be convinced that an educated chil the long run would be of greater help and value

The plan of action in the field, a removal of ties of ignorance and backwardness. There is a lor specific thrust on education. But enlighten through education alone is certainly a bewild base. To a hungry child education has no meaning dramatic results can be expected and without peo participation and social awareness, the flow of labour cannot be diverted □

MATERNITY AND CHILD HEALTH

IN the Draft Fifth Plan (1978 83) provision for Maternity and Child Health services under the Family Welfare Programme include immunisation of infants, pre-school children, expectant mothers with DPT DT and TT respectively In addition to the immunisation schemes there are schemes of prophylaxis against nutritional anaemia among mothers and children and prophylaxis against blindness in children caused by vitamin 'A' deficiencies under the Family Welfare Programme.

Towards a New Strategy in Child Education

V. S. Mathur

IN THE year of the child, perhaps nothing is nobler than taking up the foremost right of the child which is EDUCATION. When the third world is already struggling to brighten the future of the citizen of tomorrow, it becomes the duty of all beings to recognise this right of the children as the base of everything. But expecting certain superficial changes in the reorientation of approach nothing substantial has been done.

India which happens to be the largest democracy in he world today itself is in the experimental stage of providing its children with their basic right. Of a total population of more than six hundred million, children n the age group of 1 to 14, account for about 250 million which is 40 per cent of it. And the future of Indian democracy would be bright if this important segment of our population is properly developed. During the last 31 years of freedom, India has given good attention o education. The Constitution itself guarantees free and compulsory education for all upto the age of 14.

We spend about 2500 crore of rupees per year on education. Our expansion statistics are impressive but it is sad to realise that only about 20 per cent of the children in the age group of 6 to 21 are covered in the process of formal education. Pupil achievement stands at the lowest The percentage of drop-outs specially at the lower levels, is alarming. Above all education is equated with examination scores and not with depth of knowledge, understanding, expression and creativity.

The improvement programme has to be taken up in phases, the whole process being covered in the next 15 years or so. Pre-school and elementary stages should get the top priority in attention, time and resources supported by a strong programme of adult education built around self-awareness amongst the people.

All educational planning should take into consideration the prospective needs as they would arise in the coming 3 or 4 decades. Obviously the main tenets of any educational policy could be :

(a) Clarity about the values to be inculcated through education.

(b) Developing quality of life.

(c) Social cohesion through work.

(d) Linking education with employment.

(e) Removing imbalances in the system.

And it would not be out of place to add that, it is to make the system so comprehensive that every eligible child is reached through formal, non-formal and informal media.

The problem of child education in India may in the first instance be confined to two main programmes. Firstly, to cover as many pre-school children as possible so that their entry into the formal school at the age of 6 is facilitated and secondly, to cover all children in the age group 6-14 within the shortest possible time.

Pre-School Education

The phenemena is mostly unknown in India and specially in the rural areas. Some nursery schools do exist but mostly in the cities. Their number and the children on rolls in such schools is negligible. Only about 45 lakh children are involved in about one thousand nursery schools. This works out to a miserable 2.1 per cent of the total 3-5 age group of our population.

All the Commissions on education have emphasised the need to develop pre-school education as a base for good school education. Private enterprise comes most relevant to this development. To economise it may be a better idea to attach such a section to every primary school.

The main thing, however, remains to understand the philosophy behind pre-school education. General

16 DPD/79—4

y the following points are considered relevant :—

(1) Provision of healthy physical environment.

(2) Organisation of healthy, happy life.

(3) Habit formation.

(4) Opportunities for self-expression and creativity.

(5) Development of community feeling.

There should however be no formal learning and he atmosphere relaxed and free. Such schools should be provided within easy reach by all means. It is suggested that special officers be appointed for this purpose in all states as nursery education is as yet an unexplored area. The nursery school should merge with he primary school.

Elementary Education

The second significant programme which has to be strengthened is to cover all the children in the age group 6-14 in the shortest possible time as provided in article 45 of the Constitution. And most certainly it is not simply a matter of enrolment. It is equally a matter of content and achievement in education. It is expected hat by the end of 1983, cent per cent children in this age group would be covered. We have, however, to guard against wastage in the shape of drop-outs and repeaters.

Elementary stage will eventually involve all the children in the age group 6-14, irrespective of caste, creed, sex or family status. It is, therefore, necessary that education at this stage is completely socialised.

As a pre-requisite, however, it is essential that all such schools are given uniformly high levels of academic standards and facilities on a nation wide common basis. As a result the new 10+2 pattern may need to be changed to 8+4 pattern. The first 8 classes should be treated as an independent strong unit.

In such a situation the phenomenon of free education will naturally have to be modified and children required to pay fees according to the income level f their parents. No fees will be paid by those who are not paying any income tax.

At the same time we must also realise that our present institutions have an urban and elitistic bias while a majority of our people belong to the rural areas. There is, therefore, the need to transform the traditional school and make it need-based.

It is also necessary that the first five classes of the elementary stage should emphasise only on basic subjects like the mother-tongue, arithmetic and some work experience including drawing and art. All necessary general and environmental knowledge should be given through these three subjects.

It is envisaged that a child who completes the primary five classes should have much sounder knowledge of his language and arithmetic, besides being more aware of his surroundings. With such strong foundations it may be easier for an average child to proceed with the various other subjects in the ladder onwards.

Besides, it may also be worthwhile to have a system of increased open air instruction for primary school children. The Russian experiment in open air education is an example for this. In some Russian schools children are taken out into the field and asked to draw flowers, birds, leaves and insects and participate in other activities. It may be refreshing, if children spend 40 per cent of their school time in the open air.

Modification Needed

It is certain that if complete universalisation is intended, we have to substantially modify the primary school with its rigid rules and regulations e.g. single point entry, its sequential promotions and its rigid full time courses. This encourages drop-outs as it cater to the need of only routine, full time students and defeats the principle of equality of educational opportunity. To usher an era of healthy universalisation the following changes seem emergent.

1. Instead of the single point entry system we should introduce a multi-point entry system which should work out in two directions. Firstly, it should not be imperative for every child to enter class I at 6. They should be able to join the class appropriate to their age and achievement at any time, and secondly, older children be able to join primary schools in separate classes arranged for their special needs.

2 The sequential system must go. It should be possible for older children to complete their courses in shorter periods, and also for weaker ones in longer periods. They must be met where they are.

3. A system of part-time education should be built to help children who are required to work at home or in the field.

4. Such a comprehensive system may require the services of a much wider personnel. Part-time scholars and senior students could help and be paid some small allowances. Some orientation will of course, be necessary for these persons.

5. To avoid incidence of repeaters, it may be necessary to do away with annual promotion tests and have an inbuilt system of continuous evaluation in primary classes.

6. It may be worthwhile to recapture the spirit behind 'Basic Education' as 'work centered education' or 'learning through doing'. The programme of 'Socially useful productive work as mooted view of the two review committees on 'Ten Year School Curriculum and vocationalisation of education at +2 stage' are poor substitutes of what is implied in Basic Education. does not give the pivotal position to 'work'.

It must realised by all that we have a first rate crisis in education in the country and no efforts can be too big to resolve the crisis. We need to usher in a proper developmental climate in the country so that all the groups are covered with the necessary revolution, students, teacher, parents and above all educational administrators and the policans are properly motivated and act in the right direction. What we need most is faith in education itself. □

In Our Next Issue

+ **Technological choices in the Indian Perspective**
  — V.G. Rajadhyaksha
+ **Pepper Production—Problems and Prospects**
  — A.R. Patel
+ **Silk Industry in India**





WHITHER CHILDREN's BOOKS ?

YAMUNA SHANKAR

Curator, Shankar's International Dolls Museum, New Delhi and Secretary, Shankar's International Children's Competition.



Whoever learns the work by heart
Or through the story-teller's art
Becomes acquainted
His life by sad defeat—although
The king of heaven be his foe—
Is never tainted.

THIS could well be the blurb for a modern best-seller on how to win friends and influence people. But, how many of us would have associated it with the *Pancha tantra* ? These stories have been current in India for at least five-thousand years, probably longer They have been told and retold with a twist here and a turn there, among other people, in other lands, and in other tongues through more than twenty centuries.

Classics like the *Panchatantra* and *Hitopadesa* apart, children's literature in India, is of recent origin. The few books, other than textbooks, that were brought out were little more than cunningly wrapped instrucions.

Another characteristic was a heavy dose of moralising. The adult who wrote for children was much too conscious of his social responsibility to lead them in what he thought was the right direction. Much good ink and paper was expended in persuading children of the profits of virtuous behaviour.

That instruction and morality need not always be so obstrusively provided is refreshingly apparent in folklore which has stood the test of time. For instance, the Teluge anthology of the doings of that fabulous rogue, Tenali Rama. The things he said and the things he did are a perennial source of delight for children.

Such rare exceptions apart, the twentieth-century view that children need and deserve amusement is remarkably new in the history of adult-child relationship in India. Before recreational books can be written, adults have to develop a new attitude toward children and reading, to acknowledge that reading for pleasure is at least as important as reading for instruction.

In the creative field of writing for children and in the selection of themes, there are as many differing views as there are imponderables. There are those, for example, who think of a child's book as just a simpler treatment of an adult theme. This point of view considers children as diminutive adults and arises from a misunderstanding of childhood itself.

The quality that establishes a piece of writing as worthwhile reading to a child is that it is ostensibly an experience.

It may be an imaginative experience as in nursery stories and fairy tales or it may be gained from stories in the other dimensions of literature fanatasy, history, realism—that a child explores as he goes through stages in his development. But in each case, he acquires bright new impressions and ideas from his reading that will serve to illuminate subsquent new experiences gained from life and from books This background equips a child to taste the delights of fine books and in turn, stimulates his reading as it widens the base of his experience.

Another of those imponderables concerns the place of comics in children's literature. Much too much is being said about the influences and the dangers of comics. In the end, almost all these earnest discussions reach the comforting conclusion that well-intentioned comics do exist and that both dangers and influences are on the wane, if only because the publication of particularly violent comics is forbidden. Such a ban has been imposed in many countries, such as England, while in others, most notably in the country of their origin, the USA, a large number of publishers have joined in voluntary restriction in order to eliminate at least horror and sex as far as possible.

But the question remains whether this bubble-talking literature poses the danger of becoming real literature. However impalatable it may be to educated people, it is true that it is much easier for the eye to fathom an enormous quantity of sensational picture-stories than for it to take in the more abstract matter of plain print. Even a semi-literate or a backward child, can easily consume as many as a hundred comics a week. The result is that those parents who buy their children nothing except comics, suddenly become aware of the inconceivable fact that their children are no longer either capable of reading or willing to read any book which makes a demand on their intelligence.

It is appropriate to quote one of the leading editors and publishers of children's books in Europe, Mrs. Bettina Hurlimann. The danger, according to her, lies in the way language is reduced to becoming a crude accompaniment for picture. An inevitable result of commercial mass production which cannot bother itself with verbal subtleties. These abrupt short-hand phrases, drifting about in their bulging balloons, presage a new linguistic barbarism. They represent a weakening of language and an oversimplification of human affairs which has never been known before in children's literature, regardless of any particular genre.

It is necessary to examine why the comics hav such a special appeal. The one simple reason is th they offer, in the most ingratiating way, to satisfy ou express need for the pictorial or graphic delineatio of facts. The abstract letter, the representation c things through plain words, through well-constructe sentences, have all become devalued by the pleasur which pictures bring. Today we just canno have enough pictures

A child's initial approach to a picture book is pr marily literary. He expects the pictures to tell hi what he cannot as yet read for himself. And, if th pictures in his first books capture his interest an arouse his curiosity, he will then become absorbed i the art of reading For, at this stage of his developmen the kind of reading a young child does may be onl picture reading.

But his early involvement in fine books will t responsible for the formation of reading tastes an habits that influence his reading for the rest of h life. There is little doubt that the subtle combinatic of beautiful language and illustrations encourage a aesthetic experience that can develop in a young chi the basic elements of good taste in art and literatur

A couple of illustrations reproduced in these pag bring out how effectively pictorial support can be us to enliven children's books. The illustrations a from a compendium of *Panchatantra* stories beir brought out by the Children's Book Trust.

To get back to the imponderables facing produce of children's literature. Should myths, fables a legends be included in literature for children ? Tho who oppose their use claim that they are too allegoric and complicated for a child's comprehension. B there is no getting away from the fact that some these are beautiful stories, complete in themselves, a are of immense appeal to children. It would be adv able to give younger children the simpler folk tal for example—A Woman's Wit and *A Treasury Indian Tales* (CBT). Reserve for older boys a girls the more complex and symbolistic folk tales a *Indian History* (CBT publications) and the like.

Those who favour the teaching of myths and lege advance the opinion that the tales provide enterta ment as well as stimulate imagination. Living in world of make-believe, children enjoy the marvell



ıdventures and exciting contests of the gods and their superhuman achievements. Also, there is a broad humour in most of the *Panchatantra* stories such as *The Brahmin and the Goat and The Musical Donkey.*

Folk tales offer sufficient material to satisfy the wonder-loving child, for example Nagmati (CBT). These thriling heroic narrations delight children. Exposure to them should be the privilege of every child, whatever his background and environment.

Indirectly, through hearing and reading myths and legends as stories, the child is being prepared for a better understanding and enjoyment of literature and its wealth of allusions. Without some familiarity with classic myths and legends, some of our masterpieces will be almost meaningless.

With children however, the favourite remains stories about animals. Says Phyllis Jenner, the American writer : "Almost all children, big and little love stories about animals, wild or tame." At least half the questions asked by children concern nature and animals.

The earliest animal stories were the fables and the "talking beast" tales. There is no better example than the *Panchtantra stories.* They portray bird and animals as assuming human characteristics, speech, and action. This manner of portrayal has continued right into the twentieth century.

The elephant and the bear in particular seem to have a special appeal to children. They have been the subject of many fanciful stories and picture books. But only in recent years have realistic and well-illustrated stories about them been available in India. *Hari and the Elephant* and *Binoo the Bear* (CBT) are two examples.

For the bigger age group the most popular form of recreational reading is fiction. It is defined as "any literary work portraying imaginative characters and events."

Lillian Hollowell, in her illuminating anthology and survey, *A Book of Children's literature,* has this to say about fiction : Here we are concerned principally with

realistic stories in which purely imaginary events appear plausible and possible and are true to some aspects of life.

They range from events entirely within the child's experience to those outside his limited environment, but which he can enjoy vicariously.

They may be simple stories about children and their everyday experience. They may relate events concerned with distant times and places, generally classified as historical fiction. They may deal with high adventure, mystery, space, sports, fun, career, and animals. The scope of realistic stories is broad and diversified.

The chief reason given for reading fiction is pleasure. Worthwhile books have endured because they are well written and have given pleasure. In this one sentence Lillian Hollowell has put down the essence of good writing—readability.

What contributes to readability? What are the points critics consider in their evaluation ?

Writer's Workshop

For an in-depth study of these and other questions, the Children's Book Trust conducts a regular writers workshop, once a month. The response has been very encouraging and participation of a high order. Every participant is required to write for children. Whatever is written is put through the mangle, as it were. The post-mortem is thorough, the exchange of views is free and fair. How effectively the young and the old alike can come together on a common platform and discuss the problems and pitfalls of writing for children has to be seen and heard to be believed.

It is hard to be believed how the young and old together on a common platform discuss the problems and pitfalls of writing for children.

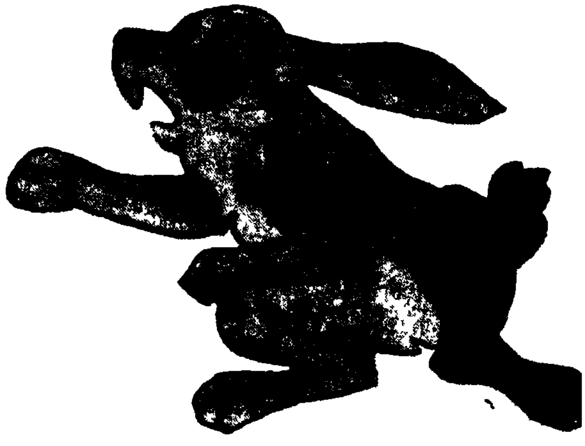
All this effort and the 300-odd titles it has brought out notwithstanding, the Children's Book Trust is painfully conscious of considerable ground that remains to be covered in producing suitable reading material for the children of India.

Equally painful is the realisation that the publishers' task in India, is, to say the least, thankless. For how many of us have yet come round to the view that a book is a better purchase for the child than a mere bauble, that the gift of a good book is twice blessed, blesseth him that give and him that takes ?

Let us take heart and echo the sentiments expressed in these lines taken from a bookmark :

Hello Book;

What are you up to?
Keeping yourself to yourself,
Shut in between your covers,
A prisoner high on a shelf,
Come on book!
What is your story?
Haven't you ever been read?
Did you think
I would just pass by you,
And pick me a comic instead?
No way book!
I'm your reader,
I open you up. Set you free,
Listen, I know a secret!
Will you share
Your secrets with me?



Healthy And Happy Children A Nation's Pride

UNITED NATIONS and its affiliated specialised agencies, national Governments and voluntary agencies will dedicate themselves to what is without doubt, the most important issue before humanity today : this is, the welfare and future well being of the children of the world, particularly those in the underdeveloped countries, where poverty and mal-nutrition, compounded with illiteracy, ignorance and superstition holds out a serious threat to a very large section of the future citizens of the world. The children of today are the citizens of tommorow.

The older generation, have a special responsibility not only in the International Year of the Child, but even afterwards, to be proud of the children irrespective of their background and social status, colour, religion, caste and creed and inculcate in them even at this tender age the time-honoured tenets of compassion, mutual tolerance and the oneness of mankind. Only then will we be ushering in a new world order where the tensions which torture our present day civilisation will deminish and mankind will move forward towards new frontiers of tolerance and understanding and future generations learn to live together in peace and contentment for the well being of everyone on this planet.

Our Constitution has placed emphasis on the need for the welfare, education and healthy development of our children, to prevent their exploitation and ensure for them opportunities and facilities to grow up to become useful citizens of this great country. The National Policy for children enunciated in August 1974 is an important landmark in the history of our country for it proclaims in unmistakable terms our determination to progress children's welfare in all its various aspects. The high-powered National Children's Board, over which the Prime Minister of India presides, is a forum where problems relating to children and their purposeful development into useful members of society are evolved, renewed and coordinated, into an effective programme to meet this stupendous task.

Investments, whether in terms of money or effort, made in programmes for the welfare of children are necessarily of long term gestation, but such programmes are well conceived and implemented, not in any narrow selfish sense or prejudice or other compulsions, but by time honoured principles of good living taught by the great religious leaders of humanity over the centuries. In our ancient country we have contributed several such teachers to the world community In accordance with our ancient traditions, we have to foster and support the various programmes evolved in connection with the International Year of the Child.

The National Plan of action for the International Year of the Child encompassed fields, like child nutrition and health, education, child welfare, attention to destitute and handicapped children and legislation to ensure a solicitous environment in which a child may develop and give of its best to the nation. 'Healthy and happy children a Nation's pride'. This is the slogan which we have chosen for the International Year of the Child. This slogan will not be an empty promise, but will resound throughout the country and the world at large, so that each one of us is motivated to put in our best to achieve this laudable goal.

The task ahead of us is indeed formidable, but no problem is capable of a voiding solution if dedicated people give their best without seeking honour of reward for a task which should be uppermost in the minds of the human race. Therefore, let us dedicate ourselves to this noble task. □

Based on the President's Broadcast on International Year of the Child.

Child Labour A National Problem

Samir Das Gupta
Lecturer
Department of Sociology
Kalyani University,
Nadia. (W.B.)

MILTON has rightly said 'child shows the man, as morning shows the day.' A study team on Social Welfare proposed "The importance of child welfare services lies in the consideration that the personality of man is built up in the formative years, and the physical and mental health of the nation is determined largely by the manner in which it is shaped in the early stages." But reality does not keep any parity with such idealism. It is estimated that by 2000 A.D. 25 per cent of the world's population will be children and 40 per cent of the entire global labour force will be below the age of 15. In developing countries 40 per cent of the total population is under 15 and 75 per cent are employed as child labour. International labour organisation in a study concluded that in Asian countries 70 to 80 per cent of the children are either working or "simply wasting their lives away." Employment of children has continued therefore to be a problem. Particularly in India where 47 per cent of the total population lives below the subsistence level and which is entagled with evil of economic backwardness, population explosion, and transitional social gimmicks, child labour problem appears as crushing and crudest one because the children who are in the real sense the batteries of the torch of national development are going to be fused. Their moral and ethical courage, physical capability, thirst for knowledge along with the firm determination to contribute their knowledge skill and energy to the fund of national development are practically going to be doomed and they are becoming the problem-children of our country for which we are assuming that the future of national glory and achievement would be shaken if the children are not treated, guided, looked after or controlled otherwise. In the year 1959 United Nations formulated 10 basic rights of the children and declared the year 1979 as the year of the child to evaluate the success and failure of its guideline. It is no doubt a noble step as well as a moral declaration of the United Nations to assess the conditions of the children of the world. India in this respect should response to its fullest extent to remove the unhealthy and unobtrusive condition of the children.

Demographic And Social Gimmicks

India is a developing country. But it is entangled with the iron hand of the demon of poverty which affects the physical as well as psychological growth of the children. Economic backwardness is pushing them to the world of problems which results in child begging, juvenile delinquency, vagrancy, truancy etc. If the fetters of poverty are uprooted, children would be saved from the unsocial activities. Secondly population explosion is threating our prospect. Thirdly, with the advent of urbanization the family structure is changing for which the children are suffeirng most from adoption-rejejction problems.

According to 1961 census the population under 15 years of age constituted 42 per cent of the total population (185 million) which increased to 48 per cent according to 1971 census (230.25 million). In India a bady is born every 1½ seconds and 122 babies per 1000 die during the first year. The rate of infant mortality is 40 per cent per year. In a Government press note it has been recorded that 12,00,000 babies die of malnutrition every year and 60 to 70 per cent children show signs of retardation due this effect. About 3 million children suffer from some kind of handicap. Only 5 per cent of the children go to a primary school and 50 out of 100 students complete Class V and 24 out of 100 complete Class VIII. But the births as well as life situation of Indian children have become traumatic when the child labour is concerned.

In Public Economy Concentrated (Carlisle, 1833) it was reported that the infants who were toiling for their bread, "have been thrown into a situation physically and morally polluted." Child labour, then, gives birth to a number of social as well as familial problems.

(1) The emotional ties between children and their parents are disturbed.

(2) As a result of such interactional distortion the children slip off from the family bondage and step into the world of disorganisation.

(3) Emotional and affectionate relation between parent and child turn into commercial interaction.

(4) Like slave dealers, the parents, who live below the line of poverty, are compelled to sell the labour of their children which brings serious socialization failure

(5) The industrialists, on the other hand, exploit the labour of the children with a motive of maximum turn over at minimum wages.

(6) Due to the wider environmental interaction the child labourers are confronted with all possibilities of being entangled with the associational corruptions which in the long run disturb the mere sedate life of the country

(7) "Role taking habit" which is the key to self development does not follow the usual instinctive course. The young girls fail to learn the art of housekeeping and traits of nursing etc. The young boys on the other hand do not get any scope of learning and playing and it becomes difficult for them to drift towards the world of social as well as economic reward. In a word, child labour system creates wound in the heart of socialization process and this sort of 'freedom of labour selling' is no doubt a signal of destruction It is also the discredit for any country of the world where parents sacrifice their children "to satisfy the cravings of absolute hunger." Of course, this sort of moral slogan does not stand before the unobtrusive and deadening condition of the self-defeated as well as alienated poor to whom starvation is the only reality. The National Institute of Public Co-operation and Child Development revealed that children of Indian Society supplied 23 per cent of the incomes of the families interviewed and 47 per cent of these families were heavily under debt. Indian Council of Child Welfare estimated in a survey that 10.7 million children are working in different sectors in India and they contribute 14 per cent of the incomes of families earning about Rs. 300 a month.

Legislative Protection to Child Workers

Labour Bureau stated the following Statistics on the employment of child labour ·

Year	No. of children employed in factories.	Percentage of children to total labour force.
1951	6853	0 27
1952	6159	0 25
1953	5056	0 20
1954	4695	0 18
1955	4975	0 19
1956	4310	0 11
1960	3220	0 10

But according to the census of 1971 about 5 per cent of the children work (10.7 milion) making India the largest child labour employing country in the world A large proportion of child labourers in India (78 7 per cent) are working in agricultural sector where there exists no statutory law to fix the minimum age which article 24 of the constitution lays down for the child labour in non agricultural sectors. "no child below the age of 14 years shall be employed to work in any factory or engaged in any other hazardous employment."

Article 39 states : "the state shall in particular direct its policy towards securing that the health and strength of workers, men and women, and the tender age of children are not . . forced by economic necessity to enter vocations unsuited to their age or strength and that children are protected against exploitation and against moral and material abandonment." The children (pledging of labour) Act, 1933 was passed to eradicate the evils arising from the pledging of children for employment in factories The employment of children Act, 1938 was amended and was again passed in order to give effect to the I.L O convention regarding night works of young persons employed in industry. The minimum age of children was fixed by the different factory acts, from time to time

The minimum age of employment of children was fixed at 15 years under the Mines Act, 1952 and 12 years under the Plantations Labour Act, 1938. In spite of such legislative protections, child labour system is continuing to its fullest extent and Indian children are being exploited as a source of free or cheap labour Making child welfare an important

aspect in the sixth plan the Prime Minister has called for a time bound programme against child oppression. Recently it was proposed in Lok Sabha that a "high-level national committee" world be formed to enquire into the problems of child labour. Of course official statistics do not depict a real picture of the nature and extent of child labour because in the non-agricultural sectors millions of under age are employed in different unstable as well as unorganizable jobs (shine boys, cobbiers, hawkers, porters etc). Besides this, a great number of children are engaged in small scale industries (e.g. leather and jute bag industry, electrical equipments industry, bidi making organizations, etc.) In coal mines, and in other medium scale industries, a great number of children are working by increasing their age levels. On the other hand due to less factory inspection, it has become difficult to assess the real statistics on the problem of child-labour and therefore a time bound national policy for the welfare of the children is facing the problem in the context of implementation.

Condition in Tea Estates

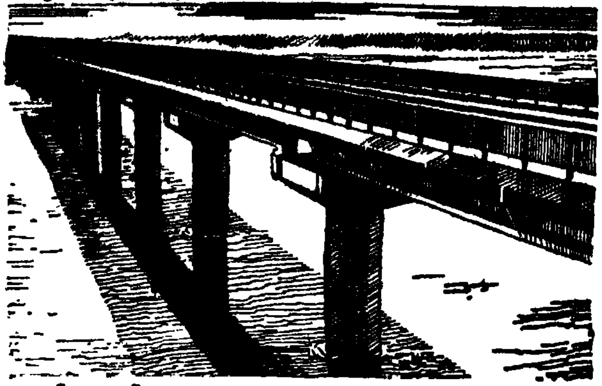
Child labour system may be interpreted as the curse for which normal growth of infant organs and mind are obstructed. When a child for too little food is engaged in hard work leaving a little time for rest and learning, he gets pushed further into the ocean of poverty. If poverty is assumed as the root-cause of child labour, then poverty is no doubt the ultimate result of child-labour. In 1932 the Tea District Emigrant Labour Act was passed. Under the Act, no child below the age of 16 could put to labour. The Plantation Labour Act, 1951 stated that 40 hours work a week would be fixed for children and no child under 12 years of age can be employed. In 1972 the average daily employment of children in plantations in Assam, W.B. and South India was 39,956 i.e. 5.2 per cent of the total labour force in those areas. Regarding wage benefit it was estimated that children got half the salary that was paid to adults though they worked for more than half the time the adults worked. A study was conducted in Dalingkote Tea Estate of Jalpaiguri District. Which reveals that children under 15 comprise of 50.2 per cent of the total population of only 1305. Out of this 366.8 per cent are employed as child labourers (Age group of 6—15 is considered) i.e. 127 child workers among whom the number of male workers is 51 and female 76. The level of education is very low i.e. only 49 out of 346 children are school going. Fertility rate in the area is very high and only 74 persons out of the total population have adopted family welfare devices. The study further reveals that they are more prone to high birth rate only due to the motive of employing their offspring i.e. more offspring begets more economic incentives (out of 227 families 198 families consist of 4—9 members). Most of the respondents (81 per cent) are engaged in jobs due to economic scarcity. In addition, 29 per cent are engaged in cultivation, and 28 per cent of the total number of children surveyed, works as servants in the houses of "Babus". Monthly income of about half of the large families falls within the range of Rs. 351 and Rs. 450 i.e. per capita income is below Rs. 70. Therefore parents sell their offspring labour only to get relieved from the pain of starvation. (64 per cent reported that their parents create pressure to sell their labour). Regarding health the study reveals that 49 per cent are suffering from diseases (14 per cent from Bronchitis, 35 per cent from Dysentery). As there are no recreational facilities in the area, 90 per cent of the total number of child labourers enjoy film shows. Secondly, loitering is the only source of pastime pleasure. Females are generally engaged in household work.

Alcoholism is a common phenomenon and 73 per cent of the child labourers are heavily addicted to alcohol ("Daru" in local term). Not only that most of the respondents are also addicted to gambling.

The Task Before the Nation

Due to poverty the children are forced to be employed and for this, their physical, social as well as psychological make-up has been distorted. Their level of aspiration has become limited and they are drifting towards a world which is of resignatory and alienated type. On the other hand it would not be wise to wipe out the child labour system from the core of society because they contribute a lot to the fund of family income and the eradication of the system would bring more misery and more poverty. Action should be taken to solve the existing problems of child labour by providing education facilities, recreational amenities and health measures, so that they would come out from the drowsy situation and get rid of such oppression. Secondly, Act prohibiting employment of the child below 15 in any job should be strictly implemented. Though it is a stupendous task and requires "massive mobilization of resources," it is our national duty to save millions of child labourers from the physical and emotional strain and to provide food, shelter, education, clothing and hope so that they would wake in a brighter tomorrow. □

Ganga Bridge, Kanpur



Overseas Communication Services, Bombay, 78.25 m

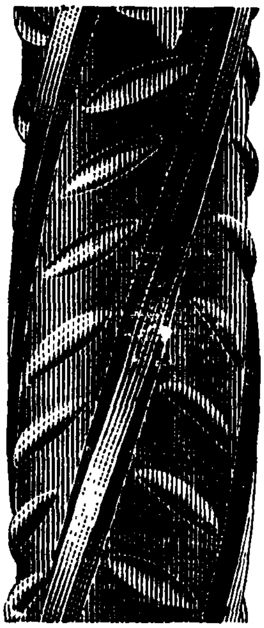


A bridge over the Ganga

A massive 18-storeyed building

Both saved up to 50% steel by using

TISCON



TISCON cold-twisted ribbed reinforcing bars ensure a double benefit: better reinforcement as compared to plain mild steel bars and maximum saving in steel.

Developed indigenously by Tata Steel in collaboration with The Structural Engineering Research Centre (SERC), Madras, these bars are manufactured in two grades, TISCON 42 and TISCON 50, by Tata Steel and their sub-licensees and are available in sizes ranging from 6 mm to 36 mm diameters The special rib pattern and greater bearing surface of TISCON bars provide them with a bond strength that is 100% greater than that of plain mild steel bars. TISCON bars also have a higher yield and tensile strength. All of which make them the best and most economical choice for sturdy constructions like large buildings, bridges, dams, reservoirs, foundations and irrigation and power structures.

For further details, please write to:
The Director of Marketing
The Tata Iron and Steel Company Limited
43 Chowringhee Road, Calcutta 700 071

TATA STEEL

TN 9984 AR

SUB-LICENSEES

ORTH: Aarti Steels Miller Ganj, G T Road Ludhiana **Bee Dee Steel Rolling Mills** G T Road, Jullundur Cantt **Kissan Engineering Works (P) Ltd.** 5 G T Road, Ghaziabad **Lauls Private Ltd** 33B NIT, Faridabad Haryana **Man Industrial Corporation Ltd** P B No 131 Near Loco, Jaipur **Singh ngineering Works Ltd** G T Road, Kanpur **EAST Calcutta Steel Co Ltd** 4 Old Court House Street, Calcutta **K R Steel Union (P) Ltd** Everest House, 0th Floor, 46C Chowringhee Road, Calcutta **Kumar Iron & Steel** Everest House, 15th Floor, 46C Chowringhee Road, Calcutta (Rolling Mill at Gauhati) **OUTH: Trichy Steel Rolling Mills Ltd.** TVS Building West Veli Street Madurai **Indian Steel Rolling Mills Ltd** Rajam House, 21 Greames Road. Madras **Prabhu Steel Industries (P) Ltd.** 5 3 65 Mahatma Gandhi Road Secunderabad **WEST: Prabhu Steel Industries (P) Ltd.** Old Motorstand, wari, Nagpur **Universal Steel Industries** 3rd Lane, Darukhana, Bombay **Universal Trading Company** B-58 Wagale Estate, Road No 31, Thana, Bombay

BOOKS BOOKS BOOKS

Stores Management

Essentials of Storekeeping and Purchasing by M. M. Verma. Published by M/s. Sultan Chand & Sons, 23, Daryaganj, New Delhi-110002, Pages 189 Price Rs. 10 for Students Edition and Rs. 20 for Libcrary Edition.

THE stores management is of recent origin. 'Recent' in the sense that even a decade ago the concept of stores management was little known and was not given its due emphasis At present, however, stores management is considered as an important part of storekeeping.

Storekeeping and purch ıg are considered to be complementary and supplementary functions. Purchasing inevitably raises the problem of proper storekeeping. As such, now every store controller realises the importance of scientific management of stores at reduced costs and with greater efficiency, saving foreign exchange, conserving scarce materials, improving product quality and increasing the possibility of higher profits.

Proper management is the basis for achieving certain objectives. In the case of storekeeping and purchasing, it is the achievement of proper efficiency and conservation together with reduced costs and higher profitability. According to the experts of scientific management, all the six M's—men, materials, machinery, methods, money ad markets—are to be brought together to achieve the pre-decided goals. In the sphere of storekeeping and purchasing too, these are considered to be the truth.

Storekeeping, in technical terms, indicates "physical storage of materials carried into the store-room in a scienific and systematic manner with a view to (i) saving them from all kinds of damages and losses, and (ii) exercising over-all control over their movement". The storekeeper is actually the trustee of the stores. In most cases, the stores deal with valuable and at times scarce materials in bulk; so the storekeeper's duty is serious. It is due to this nature of a storekeeper's duty that he is in need of proper training for good storekeeping. In the absence of proper training and a specific bent of mind, a storekeeper cannot perform his duties skillfully and vis-a-vis, fails to achieve the objectives of minimisation of the cost of production, providing efficient service, establishing coordination between the various departments of the organisation and advising the management in specific fields

The old concept of purchasing has undergone changes. In the ordinary sense purchasing indicates the procurement of materials, machines and tools on payment But "purchasing as a function" has acquired a new dimension and is defined as "the function of procurement, with a view to reducing investment, variety and value of materials so as to facilitate the standardisation and competitive marketability of the product". Some of the specific objectives of a purchase organisation may be stated as to maintain a regular flow of materials, to purchase the proper type of goods at reasonable prices, to ensure the possibility of higher profits, to achieve the objectives of standardisation of the product, etc. All these refer to the high proficiency and skill needed amongst the men responsible for bulk purchases.

Some of the important chapters of the book are: Storekeeping; Storehouse; equipments; receipt of materials; inspection, preservation and issue of materials; stores accounting; materials budgeting and inventory control; purchasing and disposal, etc.

The book under review is a text book meant for B A. and B.Com (vocational courses). It has been written in a simple language and has been supported by diagrams and charts. Price for the student edition is reasonable. There is, however, sufficient scope to improve the quality of its printing. Coverage of the book is according to the syllabus given at the end of the book. Addition of "Select References" and "Expected Questions" after each chapter would have enhanced the utility of the book for the students.

A.B. Bhattacharya

Press Power

Cooperative Press and Publicity Report of Regional Workshop—International Cooperative Alliance, New Delhi, Pages 70 ; Price Rs. 15.

OFTEN, in the developing countries, for reasons of prestige, TV and Radio acquire status value, journalists and papers taking only second place and this happens at the cost of the country's democratic growth. A press release written by a government source is often preferred to the writing of a journalist who translates the decisions and directions of policy in positive and critical terms.

The book under review is a report of a regional workshop on cooperative press and publicity, which was held in Tokyo in September, 1978 by the International Cooperative Alliance Regional office and Education Centre for South East Asia in collaboration with the Central units of Agricultural Cooperatives and the Institute for the Development of Agricultural Cooperatives in Asia. Representatives of ten countries of the region participated in the workshop and reviewed the cooperative press and publicity activities carried out in the region and has recommended imparting skills to the personnel working in the fields of cooperative press and publicity and journalism. The workshop felt that journalists are not given due importance, who has to defend the liberty of the press and assume the responsibility for all their writings as well. The journalist is a genuine observer, conscious of his place in the society and creater of a two-way communication between the grass-root level and the medium.

The report, based on practical experience gained by the participants by visits to agricultural cooperatives in Korea and Japan, is divided into three parts—part I dealing with the present situation of the cooperative press and publicity in the countries of South East Asia. Part II details the functions of journalistic medium as part of mass communication and the problems encountered in cooperative press and publicity. Part III deals with the observations made by the participants on the cooperative movement of the Republic of Korea and Japan. Part II also gives a case-study of Hirao Agricultural (Multipurpose) Cooperative Society of Japan.

The report gives an insight in the working of the cooperative movement in various countries in the region and the amount of publicity afforded to it. It also shows different stages of development of the movement, the difficulties encountered and the present position. It lists the problems of the cooperative press and publicity, and suggests steps to be taken to solve them.

The report should be useful to the government departments which are responsible for the development of cooperative movement in India, where coverage by the press is very scanty. There is almost no coverage at all by the TV and the Radio. I strongly recommend that the cooperators of India and the people concerned with the development of cooperative movement in the country should read the Japanese and Korean experiences in the line and gain by it.

B.R. Kharbanda

Urbanization

Town : A structural Analysis by K. Prabha, Inter-India Publications, Delhi, 1979, Pages 214, Price Rs. 60.

THE study of urbanization, or of the process, progress and conditions of urban growth has never been more relevant than it is today. It assumes greater significance in a developing country such as ours, where economic development, industrial growth and urbanization often do not keep pace with each other. In India, urbanization has proceeded mainly from lack of occupational opportunities in rural areas. Consequently, rural population moves to urban areas in search of job opportunities. Since there are not enough opportunities even in urban areas such problems as unemployment, growth of slums due to lack of housing facilities, congestion, crime etc. crop up The steady pace of urban growth has engulfed many villages in its stride. Such rapid growth of urban centres brings changes in their structural pattern from time to time. Furthermore, since urban centres keep on bringing rural settlements into their fold, some of the urban centres do not completely lose their rural character. This process has necessitated the study of functions and structure of cities and towns

The book under review is an attempt in the above direction. The study focusses on Punjab, which ranks sixth in the country in terms of urbanization as per 1971 census. The study covers two important prob

lems of Punjab towns. First, 'it tries to analyse the structure through the dimensions of demographic, occupational, industrial and linkage analysis. The study of structure is completed through the analysis of its functions'. Secondly, 'based on the structural analysis, urban hierarchy of Punjab town has been identified'.

The hierarchy identified by the author has been contributed variedly by the different dimensions of structure and not primarily based on functions or linkages only. In the process the author has successfully thrown light on demographic characteristics, nature of economic base and occupational characteristics, degree of industrialization and linkages and functional specialization of various Punjab towns and cities. The book is a significant addition to the literature on urban studies.

Ajay K. Mehra

Aid to Export Culture

Investment Opportunities in ASEAN countries by Dr. Usha Dar and Pratap K. Dar, Sterling Publishers Pvt. Ltd, New Delhi, 1979, pp. vi—352, Rs. 75.

IT HAS taken us three decades to alter our perception of South East Asia shedding our cultural hangover of the Nehru era to veer towards a pragmatic assessment of investment possibilities. India's long standing participation in ESCAP has assisted us in grasping ground realities although our place in the total trade and other transactions of ASEAN constitute only a negligible percentage. ASEAN countries in their turn have not completely overlooked the advantages in seeking Indian assistance in development although they are far more exposed to and attached by the USA and Japan in these matters.

As a regional organisation for economic cooperation founded on 8th August 1967, the performance of ASEAN has been remarkable and today its activities compel attention. There is evidence that all countries of the group has mapped out the Indian experience in planning and development vis-a-vis the free market economies and drawn their conclusions. Fortunately, there is the link of the English language as otherwise the rapproachment through Hindi or Malay does not exist. The inflation of the Asiatic ego is of no avail in this context. Thailand, Malaysia, Singapore, Indonesia and Phillipines are so much more developed now than ever before that they are in a position to speak with a united voice in their periodical Summits and international Conferences. The Authors evidently have the foregoing facts in their conceptual background when they launched on writing the book, in eight chapters mainly devoted to the purpose of expanding our investment opportunities through joint ventures.

The five chapters dealing with Indonesia, Phillipines, Singapore and Thailand contain a good deal of useful information culled from various sources which supply the facts that promote the climate for investment opportunities. There has been no effort to blend the perspectives of cultural composition of the area based on ethnic groups e g the Chinese or of the settled background of colonial trade and institutions in conditioning the eagerness or lukewarmness as the case may be, in accepting Indian assistance. It is also unlike that the India Investment Centre has to any significant extent associated these factors with their calculations based on surveys or feasibility studies for projects.

In the summary chapter 7 on Indo-Asian Joint Ventures and Trade the authors have given an authoritative list as well some useful trade data. The eighth chapter deals with the various principles and methodology of Benefit-cost Appraisal of foreign investments that are discussed in relation to the developing countries by the economists and policy makers. The merits and disadvantages of various methods have been broadly hinted at. These are useful to those who display the hardihood to evaluate some of the joint-ventures in the ASEAN that are successfully operating and of those that would take off after some lapse of time. This process of assisting ASEAN countries and evaluating the success of the projects have their own political underpinnings and hence, it is not so much business acumen or merely enterprise that is called for here as the nature of the evolving societies in these countries and their polity

A new type of export culture has been in evidence in India during the last two years that hold out great prospects for the Eighties. Given a thorough reading supplemented with visits, the present book will be found very valuable by the modern Indian business community in setting their sights for international ventures, not untinged with fraternal feelings for our friendly neighbours of the Asean.

B. N. Nair

Rural Development in India

An analysis of the various inter-relationships between intensity of under employment in education, population growth........

THE thirteenth volume in the series Contributions to Asian Studies presents a radically different and intellectually refreshing analysis of economic, social, political and anthropological factors of India rural development. Authored by six Indian and six overseas scholars, the ten papers included in this volume analyse the various interrelationships between intensity of under-employment in education, population growth, the green revolution, rural-urban migration, land reforms, socio-political structure of Indian democracy, and resource mobilisation for rural development. What makes the publication unique is its endeavour towards universalisation of the basic characteristics of the rural economy as evident from existing empirical data on the basis of which effective and fruitful policy decisions could be formulated.

The two research investigations, the one on rural-urban migration—Gone to Bombay: The Urban Proletariat as the Rural Middle Class—by Alan R. Beals, and the other on Jajmaniland: In India, in Economic Anthropology and Elsewhere by Anne Mayhew and Walter C Neale focussing the village system as a set of relationships defined by caste and social role, are outstanding in the sense that the radical theories based on exploitative class structure assumptions generally propagated by the contemporary political philosophers have been factually counteracted. These investigations could be an eye-opener to anyone who desires to perceive the basic urges of the village-folk and the cooperative caste-class relationships of the rural society. On the basis of his field surveys conducted during 1958—60 and repeated in 1965-66 in Gopalpur village located some 450 kms east of Bombay, Beals has shown that the middle class landowning small farmers rather than the landless rural proletariat primarily for the purpose of obtaining funds for investment in their agricultural activities opted for the deprivations of the slum dwellers in Bombay and in the process often succeeded in their mission. May be that the quarry workers from Gopalpur village were different from others and were able to protect themselves from the usual urban difficulties of penury, liquor or drug addiction, and psychological depression and deprivation They went to Bombay to seek happiness by escaping from enemies, bad family situations, debts, and other social consequences of their own misbehaviour, but in Bombay, they entered a therapeutic community, according to Beals, where they were surrounded by fellow patients and former friends. When cured of the malady which induced them to leave Gopalpur, these quarry workers returned home with adequate money to enter the rural economic system as middle class small farmers Alan Beals is open to the possibility of Gopalpur case being special, but the study does suggest that the linkages of rural-urban migration could be oriented in such a way that the earnings in the latter could be mobilised for asset creation in the former.

In their anthropological research on Jajmaniland, Mayhew and Neale have discussed aspects of the long lasting hereditary relationships of different castes and classes in rural areas involving both sides in the provision and enjoyment of goods and services. Under this system, the property owners of the village provided the artisans and servants with a fixed percentage of the harvests and the artisans and servants, in their turn, provided agricultural labour and other services The potters, dyers, goldsmiths, drummers and the untouchables were generally dependent for most of the business on the village landlord (though they were able to have transactions outside their own village) and in return, they received fixed amount of grain for their services which obviated any other special social security measure. The system imposed on different castes and classes an ethical code of mutually inter-dependent relationship incorporating various duties and obligations. In this connection, Mayhew and Neale have aptly observed, "What is important—for scholars as well as for administrators—is to recognise that the village systems in India have differed from the typical European systems in flows of valuables, in associated ethics, and in likely responses to particular economic (and other) stimuli". (p. 152) This study makes one

---

Contributions to Asian Studies, Volume 13 : Rural Development in (India) Editor : Mahinder D. Chaudhry, Leiden, The Netherlands, 1979, pp. 198. (Price not given)

feel that a proper recognition of this mutual interdependence would not have only avoided much misunderstanding prevailing between various sections of the contemporary rural system, but it would have also helped beginning of a significantly different kind of rural development programme than adopted so far.

Michael Forbman's analysis of Rural Agrarian Employment, Land Relationship and Income Inequality in India has, on the basis of behavioural pattern of risk-takers which in rural context inevitably was related to the asset-ownership in the shape of land-holding sizes, constructed an analytical model helpful for understanding the relationship between India's rural employment, income distribution and landowning nexus. His conclusion that the proportion of landholding class was directly related to inequality of income distribution leads him to suggest that the intra-class inequalities may be considerably reduced by initiating land reforms So far, so good, but the accelerated pace of land reforms by itself may not reduce the inequality as long as other forms of property exists in the community. Integrated rural development, which is emphasizing industrial growth to be carried out along with agrarian development and land reforms, will certainly add new possibility of inequality in asset (and property) ownership which would provide another ground for risk-taking in village economy. In such cases Michael Forbman's prescription could be only of limited value.

Regarding unemployment, Dr. Kanta Ahuja on an analysis of various approaches to the definition and measurements of employment and underemployment in India has shown that 10 per cent of workers are unemployed but only 5.8 per cent of the available labour force days are so of which about 12.8 per cent days are due to voluntary idleness. Mahinder D. Chaudhry displayed rare insight by emphasizing the capacity of education and social reorganisation to enable the unemployed manpower to adapt themselves to the changing needs of the society. The empirical data for 136 countries suggested a minimum of 40 per cent adult literacy as a precondition of economic "take-off" which implied that even India with 30 per cent literacy level would need several decades to come near this level. But the financial burden of providing right educational facilities is unbearable, while the level of unemployment is reaching alarming proportions. Prevailing high job expectations have further complicated the problem. To raise rural productivity which is important for rural development, the green revolution has made substantial contribution. Results of the various evaluations of its impact on the rural social structure in India have shown the same to have mixed effect. George Blyn's paper emphasizing the scale neutrality of the new technology has pointed to the polarisation of landholding and inequality in asset ownership resulting from financial, skill, and other requirements of the new technology in agriculture. Much intensive research has been completed in India on the subjejct. A comprehensive report on it might have been more informative in the present context.

The paper Fertility, Society and Food in India in which David G Mandelbaum discussed the relationship between poverty, fertility rate and the green revolution in India has not conformed to the analytical depth and objectivity displayed by other papers His observations regarding the Indian preference for large families in order to have "more opportunities for contacts with influential officials, professionals, and businessmen" (p 164), or "for collecting decreasingly fewer bits of wood and dung for fuel" lest "the family may go hungry even if there is grain for the pot" (p 160), or on compulsion on men to have vasectomies during 1975-77 emergency—"there seems actually to have been little effective coercion or compulsion" (p. 171)—would not be swallowed by the informed Indian readers. On the other hand, Gian Singh Sahota and Chander K. Sahota in their well-documented research investigations have shown that the green revolution which raised the agricultural productivity significantly in the Punjab also induced schooling as a means for expecting higher wages which considerably helped even the scheduled castes whose supply as work-hands was thereby reduced and wage-rates increased. The authors' suggestion for making fertility cost higher and education cheaper while highlighting social cost (in contrast to the private advantages) in high fertility rate is indeed very convincing and the Government of India is in fact doing much in this direction.

An academic publication of the type under review which should be welcome to scholars in developing as well as other countries however suffers from two limitations which may be pointed out here. First, the essays included in the series deal primarily with only a limited segment of the country. They are related to the Punjab-Rajasthan-Maharashtra region whilst other parts of the country deserving similar attention have been completely left out. Secondly, even in the areas discussed in the publication, many important dimensions of rural development which could probably be object lessons to other developing countires have not been analysed. For example, the area deve-

lopment programmes under Antodaya and Somangalam projects which attempted to raise the income level of households of the entire village so as to raise them within a specified period above the poverty line, the integrated rural development programme which attempted synthetic promotion of agriculture and small and cottage industries in rural communities, and the role of public participation under block level planning have not been touched at all. The various private as well as governmental agencies working in rural areas should have also been assigned some space. As the series of publications is going to cover other developing countries as well, it may be suggested that a brief abstract of the various papers may be useful, specially to the busy policy makers and professionals. A select bibliography on the subject and a geographical map of the area could also be useful additions.

Bepin Behari

Reflection of a Fascinating Autobiography

Baburama and Babur

by Krusnachandra Jena;

Sundeep Prakashan, Delhi; Pages 128; Price Rs. 50

BABURNAMA written in Turki is an autobiography of surpassing interest. Babur has not failed to paint faithfuly the world in which he lived. The pages of the autobiography cast a spell of his charming personality on the reader and the force of a soldier-statesman-diplomat. He had a great regard for truth. He himself has written, "I do not write this in order to make complaint; I have written the plain truth. I do not set down these matters in order to make known my deserts; I have set down exactly what happened." It has touched the basic values of life and elevated our sense of appreciation to the highest pitch. And that is the reason this autobiography has crossed the barrier of time.

There are a number of books on the autobiography of the founder of Mughal empire in India. The writers have tried to judge the work of Babur from different points of view. Dr. Jena has tried to make a comparative study of a number of situations in similar conditions to bring out the most interesting figure in the whole range of mediaeval history. The book would give the reader an insight into the difficult conditions in which the record of his life—the *littera scripta* that mocks at time—remains unaltered and imperishable.

Students of history will find it intesting and valuable. Except sprinkling of proof mistakes here and there, it is a useful addition to the large collection of books on the subject.

. N.N. Chatterjee

Books Recieved

The Status of Women : Literacy and Employment by Asok Mitra ; Published by Allied Publishers Pvt. Ltd.

The Status of Women : Household and Nonhousehold Economy Activity by Asok Mitra, Adhir K. Srimany and Lalit P. Pathak ; Published by Allied Publishers Pvt. Ltd.

Implications of Declining Sex Ratio in India's Population by Asok Mitra ; Published by Allied Publishers Pvt. Ltd.

Symbols of Power : Studies on the Political Status of Women in India Edited by Vina Mazumdar published by Allied Publishers Pvt. Ltd.

Survey of Research in Geography 1969-72 Editor-in-chief Moonis Raza ; Published by Allied Publishers Pvt. Ltd.

The Ambiguity of Ideology and Administrative Reforms by Krishna Kumar Tummala ; Published by Allied Publishers Pvt. Ltd.

Sociology of Indian Sociology by Ramkrishna Mukherjee ; Published by Allied Publishers Pvt. Ltd.

Farm Size, Resource-Use Efficiency and Income Distribution by G. R. Saini ; Published by Allied Publishers Pvt. Ltd.

Sugar Cane by C. N. Babu ; Published by Allied Publishers Pvt. Ltd.

Finances of Bangalore Municipal Corporation by S. Rama Rao ; Published by Allied Publishers Pvt. Ltd.

End of an Era

LOK NAYAK Jaya Prakash Narayan is no more with us to guide and inspire. In every Indian home there is a sense of personal loss and bereavement. It is as if a close family tie has irrevocably snapped. With the passing away of this towering personality, an eventful era in the history of our nation has also come to an end. He was one of the last surviving links with the glorious Gandhian age. Indeed, he was one of its most authentic voices ever pointing to the path of service, sacrifice, simple living and high thinking.

It was my privilege and good fortune to have been associated with Jaya Prakashji for nearly three decades. He bestowed on me his love and affection in full measure. He was cast in a mould of which heroes are made but his human qualities and unassuming and gentle nature cast a spell on all those who came across him.

It is tragic that we should lose this eminent leader at this critical juncture in our nation's history. It is difficult to visualise that national scene without his soothing presence and sagacious counsel. We have to bow to the inevitable and face the future with courage and fortitude and do our best to complete the mission for which he lived and died. In his later years, he was deeply preoccupied with the steady decline in our moral standards and repeatedly asked the question : can a nation without moral fibre survive?

May the fragrance of his memory ever abide with us and guide us in the years to come.

N. SANJIVA REDDY,
President

Regd. No. D(D)-152

Thus Spake Nehruji

"I have always felt that the children of today will make India of tomorrow, and, the way we bring them up will determine the future of the country.

*

Children should have opportunities for development, and they should be given a proper lead. The child should not be forcibly bent this way or that like, a sapling. Forcible correction may do more harm than good.

*

The vast army of children all over the world, outwardly different in many ways, speaking different languages, wearing different kinds of clothes and yet so very like one another. If you bring them together they play or quarrel but even their quarrelling is some kind of play. They do not think of differences amongst themselves, differences of class or caste or colour or status They are wiser than their fathers or mothers. As they grow up, unfortunately their natural wisdom is often eclipsed by the teaching and behaviour of their elders. At school, they learn many things which are no doubt useful but they gradually forget that the essential thing is to be human and kind and playful and to make life richer for ourselves and others.

*

Grown ups have a strange way of putting themselves in compartments and groups They build up barriers and then they think that those outside their particular barrier are strangers whom they must dislike. These are barriers of religion, of caste, of province, of language of wealth, of poverty. Thus, they live in prisons of their own making. Fortunately, children do not know much about these barriers which separate. They play and work with one another and it is only when they grow up that they begin to learn about these [illegible] from their elders. I hope you will take a long time in growing up.

*

My generation is a passing one and soon we shall hand over the bright torch of India, which embodies her great and eternal spirit, to younger hands and stronger arms. May they hold it aloft, undimmed and untarnished, so that its light reaches every home and brings faith and courage and well-being to our masses".

-Jawaharlal Nehru

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and

yojana



PEPPER PRODUCTION

HCL Computer Plant in Singapore

HINDUSTAN Computers Limited (HCL) is setting up a plant in Singapore to manufacture computers for the domestic consumption and for export to West Asia HCL, will produce a complete line of micro and macro computers in the Abacus series According to a Singapore Government publication, HCL also proposes to employ 200 computer engineers and 100 operative personnel to service its customers □

Cooperative-Mill makes Profit

A COOPERATIVE spinning mill in Rajasthan made a profit of Rs 91 lakh in the year ending June 30, 1979. This is the highest gain any cooperative textile mill earned in the country compared to the preceding cooperative year Doubling the present strength of 25,000 spindles has been decided and much progress has been made to start 7,500 spindles, shortly The mill has a plan to set up 300 handlooms at an estimated cost of Rs. 63 lakh at Shahpura area □

Postal Services in More Rural Areas

THE postal department had shown a better account of itself by exceeding the annual targets in three areas of service provided in villages. The department opened 5,086 post offices till the end of February against the target of 5,000 new post offices Similarly postal counter facilities had been extended to an additional 13,114 villages against 10,000 targets.

By the end of February, the department installed more than 52,000 additional letter boxes in villages, exceeding the target by 2,364 boxes. □

Public Sector Steel units make profit

PUBLIC sector steel plants earned a total net profit of Rs. 42 crore in 1978-79 as against Rs 36 68 crore in the previous year. The increase in profit was despite the escalation in production cost caused by higher excise levies on coal and power from March, 1978, wage increased, entry tax imposed by Madhya Pradesh, and substantial rebate in the price of steel for small scale industries corporation. The availability of steel went up by 16 per cent in 1978-79 for small scale industries corporation. The total availability including the production in six integrated steel plants, mini steel plants and imports rose to 8 2 million tonnes from 7.1 million tonnes in 1977-78. □

OUR ACHIEVEMENTS

Improvement in Foreign Trade

INDIA'S external trade registered a noticeable improvements in 1977-78. The average index of the next terms of trade was higher by 22.7 per cent over the previous year.

The total trade in 1977-78 amounted to Rs. 11,439.96 crore. In 1976-77, it was Rs. 10,219.73 crore. For the first ten months of 1978-79, the figures are Rs. 9,833.09 crore of which imports are Rs. 5,417.28 crore and exports Rs. 4,415.81 crore. Trading conditions in international market during 1978-79 continued to be difficult because of the low level of economic activity in the industrialised countries. The sharp reduction in world trading had its effect on the growth of Indian exports.

The downward trend has been noticed mostly in items like tea, coffee, cashew and steel, these together accounting for a decline of about Rs. 400 crore. Thanks to our selective export strategy, the exports of non-traditional and dynamic sectors have shown considerable bouyancy. Exports of engineering goods, handicrafts, gems and jewellery, cotton garments, leather and leather manufactures and marine products have registered growth rates ranging between 8 per cent to 43 per cent. □

YOJANA

Volume XXIII Number 21

16 November 1979

25 Kartika 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor : P. C. Roy

Editor : Sethu Rao. S

Assistant Editors: P. Perumal
R. R. Rao

Sub-Editor : Vijay Verma

Senior Correspondents :
AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S. K. Ray
HYDERABAD : B. N. Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM : Rosscote Krishna Pillai
GAUHATI : R. N. Bez Baruah
Photographic Officer : K. S. Nagaraj
Artist—P.K. Sen Gupta

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910, 385481 (extensions 402 and 373) **Circulation:** Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42. Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4.50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy— £0.12 or $ 0.25

Editorial

Bank Credit for Priority Sectors

THE TREND and progress of banking reveal in many ways the banks' growing involvement in lending to priority sectors like agriculture, small scale industries and small borrowers. Following the new approach to lending pattern by commercial banks, a significant structural transformation in the composition of credit has already taken place. The share of large and medium industries in the total bank credit, for instance, has declined over the years as the relative share of priority sectors like agriculture has gone up. The pace of such transformation will quicken as a result of the guidelines issued recently to the banks in the light of the recommendations of the five Working Groups set up by the Government of India in October 1978.

It is true the banking system will have to go a long way tc achieve the target relating to rural lending. By March 1979, the public sector banks were expected to achieve a credit-deposi ratio of at least 60 per cent in respect of their rural and semi urban branches separately. The private sector banks also have to reach this target within a time bound frame. The all India ratio for the rural and semi-urban areas at the end of the June 197 were 52.5 per cent and 47.4 per cent respectively. Progress in this respect, is, however, uneven. With a ratio of 76.3 per cent the southern region has exceeded the target in respect of rura areas while it has nearly reached the target for semi-urban area with the ratio of 59.7 per cent.

The deficit areas will naturally engage the immediate atte tion of the banking institutions. At the same time it has to l kept in mind whether these areas have the requisite capacity absorb credit facilities offered by the banks. Mere opening branches in unbanked areas will not necessarily help adequa business on a commercial scale. The number of bank offices rural and semi-urban areas had already gone up from 19,388 21,178 in the course of one year. Opening of about 6,5 branches during the next three years (1979-81) are being e visaged. But the administrative apparatus does not appear to geared to the needs of the situation which calls for initiative preparing bankable schemes. Rural branches may have prov their efficiency in mobilising deposits but have yet to make dent in profitable schemes of investment in the areas served them. Non-recovery of loans has become a regular feature rural banking system. It will spell disaster unless effective m sures to counteract it are immediately taken. The State Gove ment functionaries at the district level should come forward a bigger way to work in close collaboration with the banks merely in the preparation of the various schemes of rural devel ment but also ensuring timely recovery of the money invested the banks in the developmental schemes launched by the G ernment. A qualitative change in the functioning of the banks rural areas can come about if only the State Government fu tionaries engaged in rural development can establish a well- rapport with the bank officials in rural areas. Even DICs w banking expertise at their command will have to exert more make any appreciable difference. □

Technological Choices in the Indian Perspective

V.G. Rajadhyaksha
Member, Planning Commission

TECHNOLOGICAL choices is a subject which requires to be dealt with in a professional way, no different basically from subjects like thermodynamics or the mechanics of structures. Introduced at the proper time in the syllabus it could perhaps affect career choices in a way which no later input could match. The subject of technological choices has no meaning unless it is related to generally accepted national objectives and such objectives find their clearest enunciation in the National Plans. The Sixth Plan and the perspective of the 80's that it seeks to project form the framework in which this subject should be discussed. Let me first however try and dispel the scepticism that surfaces from time to time about the planning process. Whenever in India there is a serious economic crisis, as there is today, the relevance of national planning, is called into question. People begin to ask why, if we cannot prevent inflation, if physical targets cannot be achieved, if projects have to be dropped or rephased there is any need to plan.

Main Purpose

The answer to this question is that the numerical framework of the Plan—the various numbers in it—although important, is not its only or even its main purpose. The main purposes of planning are firstly to arrive at a national consensus on what our socio-economic goals should be and secondly to formulate a strategy for achieving these goals as rapidly as possible. The quantitative exercise is merely an attempt to measure in physical terms the extent to which, in a 5 to 15 year-time frame, we may be able to achieve these goals and strike a balance between the growth rates and resource needs of different sectors of the economy, What excessive rates of inflation or other such economic problems may do is to lengthen the time frame for achieving these targets. They do not or should not affect either our goals, priorities or our long-term strategy.

The most important of such goals in the Sixth Plan and also the 15 year perspective in which it is framed is finding productive employment for almost the entire working population of the country within a decade or so. The rationale of this is simple, namely, that the achievement of this goal will require or enable a number of other important national objectives to be met, namely raising income levels but narrowing income disparities, reducing population growth rates, providing minimum needs to everybody and becoming increasingly self-reliant. One of the most critical components of the strategy of the Plan is the choice of the technology that we adopt for producing the various goods and services that we will need. Although pharases like 'appropriate technology' have been invoked for many years, little if any real thought has been given by planners to technological choices. The results of this neglect have for the first time been quantified and the Sixth Plan shows how organised industry, despite the fact that it has absorbed a very large share of the national resources, has done very little to solve the problem of unemployment.

Ideal Technology

In the Indian situation the ideal technology would be one which, per unit of output, maximises employment but simultaneously minimises capital require-

Based on Convocation Address delivered at IIT, Madras.

ments, **production** costs and energy inputs especially if they have to be non-renewable energy inputs. The perfect technology must also not be dependent on imports, should be able to produce goods which have a high export potential, cause no damage to the environment, can use fully the human skills that we possess and is not too commercially risky.

It is quite obvious that no such utopian technology exists and that making technological choices is an optimisation exercise involving trade offs. To be able to carry out such an exercise it is necessary to give weightage to the various parameters, and recognise the constraints under which we operate. There is, for instance, a general consensus that political, social and moral compulsions to give everybody a chance to earn a living transcend all other considerations Yet we are aware that even with the low wages that prevail in our backward rural areas, a very labour intensive technology might make production so costly as to make the product uneconomic. A sensible compromise between labour intensive and labour saving technology must therefore be found.

Bad Choices

These are not, as they may seem, simply academic exercises. We have unquestionably made some bad technological choices, consciously or otherwise, in the past in industries such as textiles, leather, oil-milling, matches and pottery. Whereas in 1901 small scale and village industries employed about 10 per cent of our work force, by 1961 the figure was only 7 per cent even though the per capita consumption of these goods has gone up. This has meant the loss of some 9 million jobs, a staggering figure by any standards, if the shift to large scale mass production techniques in these cases had been accompanied by a substantial saving in the real cost to the cosumer, these technological choices may have been easier to defend. But there is no evidence to support this. I use the word real cost because cost comparisons of technological choices must be made by ensuring that subsidies real or concealed are excluded. For some reason we have backed off from doing so. The Planning Commission has, however, recently attempted such an exercise in the case of a few industries and found for instance that the optimal technology for sugar could well be mini-sugar plants and not standard large or the conventional khandsari units.

Large-scale industries have enjoyed and continue to enjoy many forms of subsidies. They can be overt such as concessions on capital by the State to the entrepreneur including outright grants, low interest rate, accelerated depreciation allowances and tax holidays. In addition, there are many concealed subsidies such as the subsidised infrastructure provided by the larger cities around which many of these large-scale units cluster. In such urban conglomerates, housing, power, water supply, transportation for workmen are all heavily subsidised by the State despite the appalling conditions which prevail in our slums. Then again for essential consumer articles, which must be distributed throughout the country, transport costs are much higher in large concentrated production complexes than in widely dispersed small ones. Transportation costs are also subsidised because the fuel for it, whether it is diesel oil, coal or power, is sold at well below its true economic cost Finally even from a purely economic point of view, it must be recognised that a worker displaced or not employed is a real cost to the country in terms of consuming scarce resources for which there is inadequate return. The social and human consequences of under-employment or unemployment are, of course, much worse.

Apart from employment, it is necessary to focuss attention on a constraint on technological choices which has recently assumed alarming proportions for most of the world, and we are no exception, namely, energy. Our fossil fuel resources are very limited and even coal, the most abundant of our fossil fuels will last us only for a few more decades if we follow the technological path of the developed world. The position in regard to petroleum-based energy sources, especially essential products like kerosene and diesel oil, is for worse and the problem of getting physically enough crude to meet our modest needs is already posing serious problems.

While we can and must exploit fully our hyde potential, this is by no means inexhaustible, apart fron the heavy capital costs and long construction perio which hydel projects entail. One of the most impor tant factors that we must take note of in choosing technology therefore, is how much energy per unit c output does it use. An even more relevant questio to ask would be—can it be adapted to use renewabl energy sources excluding of course convention hydro-electric power.

The practical exercise of these options is not far-fetched as it may, at first appear but it involv exciting technological challenges. For instance, as means of providing motive power for tractors an trucks, the use of alcohol must be regarded as a serio possibility. I am told that in China today there a thousands of tractors which operate on biogas stor

in a balloon on top of the chassis. Conservation of energy is no less critical. Your Director was telling me that your Institution proposes to examine the use of gravity propelled rail mounted vehicles to overcome the pollution problems and high costs of conventional urban transportation system. This is an excellent example of how innovative technological options should be explored. Again, when we have a choice of materials for constructing buildings, machines, vehicles and manufacturing various consumer goods, should we not look a lot harder at how much non-renewable energy is needed to produce them. Judged by these standards wood and plastics based on alcohol may have to be given preference, where practicable, over energy intensive materials like aluminium, copper and alloy steels.

Our energy constraints, however, raise even more basic issues such as what life styles should we aim at for the mass of our people. Should it be, as it seems to be today, the energy intensive life style of our urban elite modelled on what our intelligentsia see of the developed world, complete with its accompaniment of air conditioners, geysers, washing machines, vaccum cleaners and personalised automotive transport. If so it is quite obvious that, given our current knowledge of present and possible future technological options, we will hit the energy barrier before even a tiny fraction of our population is covered.

Another constraint, looming large, is the environment—the protection of which is a matter of increasing national and international concern. We are and have been damaging our environment, often irreparably, by over-exploiting our natural resources whether it is our forests or rivers or oceans, by setting up industries which cause unacceptable levels of air and water pollution and by using industrial products such as fertilizers, pesticides, detergents and automotive fuels wastefully and indiscriminately. Minimising such damage is at least partly a matter of making the right technological choice.

Need to Change Course

All this I believe leads us inexerably to one general conclusion, that considering only three of the many factors relating to technological choices that I mentioned namely, employment, energy and environment, we may need to change course. This is in fact precisely what the Sixth Plan proposes. To actually do so we shall need to get out of our traditional thinking ruts. Following blindly what the develoved countries have done or are planning to do is one such rut. Government's fiscal and other policies will also have to be re-examined to ensure that the appropriate technological choices do not become economically unviable. Fortunately we have not burnt all our boats as for instance by getting locked into high energy life styles. We have, I believe, another 20 years or so, say upto the beginning of the 21st Century to move to a sustainable mode of economic development and life styles but the time to start making the basic discussions is ripe now. The next 5 to 10 years may well decide the fate of the country. These decisions are not so difficult to take at macro levels like the State and Central Governments. It is the recognition by those in whose hands real grass-roots technological decision making lies how they think and what they do that is vital to our survival as a nation.

It would be idle to pretend that such decisions are easy to implement because they involve changes in attitudes and value systems of a very fundamental nature throughout society. Take the IITs themselves. Their origin, as institutions, began with close linkages with similar institutions in the developed world. Their faculty is generally drawn from people who have studied in other IITs, or done post-graduate work in foreign universities. The background of students especially the better students, is urban middle or uppr middle class. To compound the difficulties, our education system predisposes us sub-consciously or otherwise to accepting the value systems of the developed world. Is it surprising therefore that the best students, the 'creme de la creme' of our gifted student world, are snapped up by foreign universities ! Is it in any less surprising that these students find the intellectual work environment abroad far more stimulating than in industry and research establishments within the country and few therefore return. The fact is that industry, industrial research and the university system of the developed world are broadly in tune with each other whereas in India there is virtually no such empathy.

Very few of the IIT students, I have met find the environment of Indian industry truly stimulating. As a result some of them, if they do not go abroad, move via the Institutes of Management into marketing or so-called 'general' management. Can we expect this environment to change ? Let us remember that Indian industry is not the public sector nor merely the large professionally managed companies who alone perhaps offer the possibility of creating a receptive environment to the IIT products. Even amongst them the number who actually do so are relatively few. Indian industry is and is going to be increasingly a mosaic of a large number of small and medium entrepreneurs who, unless they are technologists themselves, find that the IIT graduate has attained levels of sophistication far over their heads and beyond their needs.

It seems to me therefore that either Indian industry or the IITs must think afresh about their interaction and the latter seems to be more practical. Let me not be misunderstood. There can be no doubt that IITs must continue to be centres of excellence and that they must set the pace and not become just another group of engineering colleges. But how does one define excellence? Is it only by outdoing MIT or Caltech or Standford or Princeton in their fields of technological supremacy or is it also by looking at the technologies India needs and perfecting them according to the criteria by which technology should be judged in the Indian environment. I do not think that it is anybody's case that developing an agricultural pumpset which is say 20 per cent more efficient, 20 per cent cheaper, can be animal powered, and is practically maintenance-free is any less technologically challenging than say developing a fast breeder reactor. Less glamorous perhaps and that is one of the facets of the problem.

Most of the areas where technological inputs are required deal with problems outside the metropolitan areas and large cities. How best to use cheap local materials of construction, or produce good quality essential consumer goods using inexpensive local animal, mineral or vegetable resources, or how to improve farm implements, transportation systems and domestic appliances such as cooking stoves and lanterns. All these are real problems requiring sophisticated multi-disciplinary inputs of a high order if they are to be solved and they are not all Schumacher's 'small is beautiful' solutions. Many may require mass-produced components such as solar cells involving heavy capital investments. But they cannot be solved by sitting in laboratories in large cities They require our technologists to go and even more important to stay in the field. While individual students and faculty members do, on their own, attempt to tackle some of these problems it remains today something which is left to the initiative of the individual.

Institutionalised Awareness

My humble plea therefore is to suggest that creating amongst the students of IIT's a high awareness of the nation's goals and its constraints, some of which I have touched upon, requires to be institutionalised. This can perhaps be done by introducing compulsory courses on technological choices drawing on the inputs of economists, sociologists and experienced and innovative field workers. I would also suggest for consideration that all students could spend one or two semesters studying and carrying out complete projects in a village or a small town whether it is providing an assured drinking water supply or putting in a sewage gas plant or improving the quality and productivity of one of the local traditional village industries.

It could be argued that this is not what the IIT's were set up for and these tasks are more appropriately left to polytechnics and diploma colleges. I am afraid it is precisely this rather condescending approach to these mundane but vital sectors of the economy which may tend to make IIT's less relevant as time goes on. I appreciate that it may mean that within a 5-year course some subjects cannot be studied to the advanced levels that they are now. Does this matter? Can these inputs not be provided at the post-graduate level so that their output can be regulated to meet the demand of sectors of the economy which will continue to need the services of those who will have to work in the conventional frontier areas of technology. I am told that very few of our IIT students stay on in IIT's for post-graduate work and this is perhaps one way of dealing with the problem.

Reorientation and Right Choices

Government and industry have also a part to play in fostering such reorientation and should actively support it by placing funds at the disposal of IIT's for working on projects which help us to make the right technological choices and oversee their application in the field. Industry too can be persuaded to play its part especially in supporting the post-graduate programmes I have mentioned if they see a link between such programmes and their needs. If one could thus succeed in creating an environment in which graduating students can find the intellectual challenge and social relevance within the country that they all, I am sure, look for we will have made a major break through in the sphere of higher technical education which many less gifted institutions will begin to follow.

In conclusion and by way of summing up I would like to say that I am sure that these thoughts are not new and that many of you are already thinking on some of these lines. All I have tried to do is to point out that the time we have for making some of these basic decisions is short and our options will begin to get fewer and fewer the longer we wait. ☐



Photo Courtesy : ICAR Publications

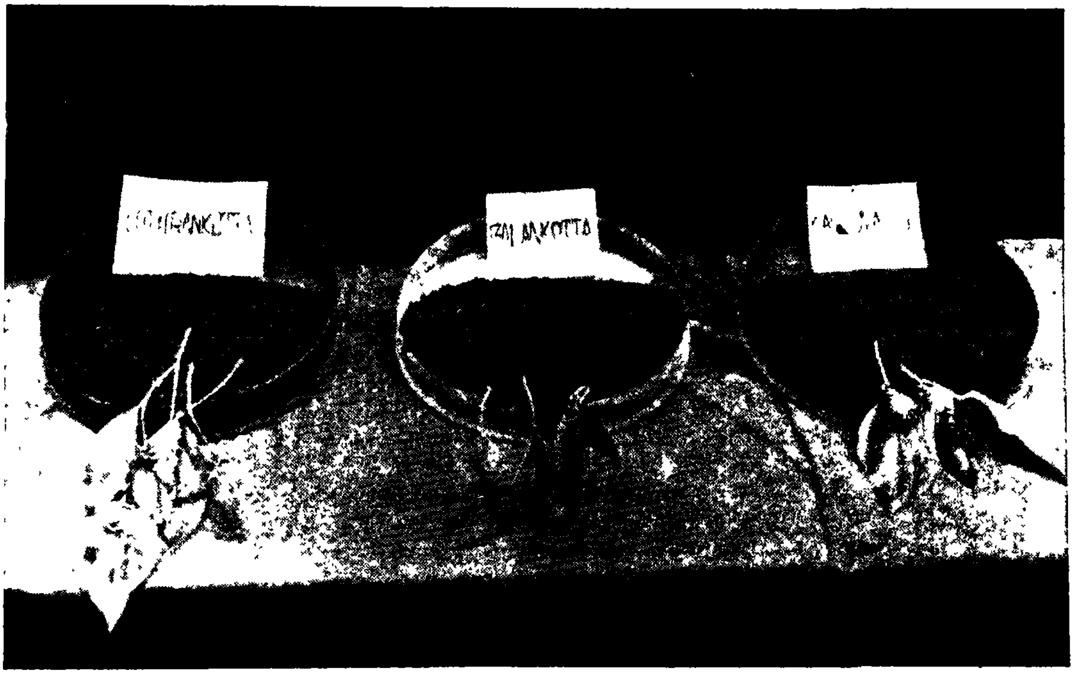
Pepper Production : Prospects and Problems

A. R. Patel

Bank of Baroda Bombay

OUR exportable quantity of pepper has largely remained stagnant for the last two years at about 35,000 tonnes annually. Of this, 'Tellicherry bold' variety of pepper was about 6,000 tonnes. 'Tellicherry bold' variety of pepper being grown in the Malabar region has been in great demand. However, it is the costliest of all the pepper varieties grown in the country. While the first meeting of the techno-economic panel, of the pepper community comprising India, Indonesia and Malaysia held in Cochin this year discussed a large number of issues of pepper productivity, there has been the most urgent need for evolving a strategy to increase pepper production through various measures—short and long term. The measures should include research, development financing and ezport organisations for increasing productivity, production, profitability and export of pepper and pepper prodücts in sizeable quantity. It is in this connection that, while the Union Government is planning to set up a commodity Board for pepper and spices development (PSDB) an attempt is made here to discuss the relevant is sues of pepper production and the role of the proposed Board for all-out pepper development and increasing profitability of its cultivation by small growers.

BLACK pepper is considered to be the 'King of spices'. It is the most important foreign exchange earning commodity among the Indian spices. It normally accounts for nearly 50 per cent of the total export earnings from all spices. Trade in Indian pepper is a legacy from ancient times. It is popularly considered as black gold because of its unique position in trade. There were established sea routes from India to Mesopotamia, Arabia and Egypt for carrying Indian spices and perfumes in the past. India has, however, lost the world pepper monopoly during the last two decades because of the poor attention paid to its development. Till recently India had ranked first in both production and export of pepper. India's share in the world pepper trade was 80 per cent in 1947 but declined to 60 per cent by 1951-52, 36 per cent by 1956-57 and is currently 21 per cent. The per hectare productivity of pepper is the lowest, though India has the largest area under this crop—11,39,520 hectares. The basic reason for the stagnant productivity and loss of export monopoly has been the poor developmental attention paid and the majority of small farmers' inability to go in for the modern practices for cultivation. About 80 per cent of the pepper area is held by small farmers with holdings less than two hectares.



High yielding varieties of pepper

India accounts for nearly 21 per cent of the world production of black pepper. Other important pepper producing countries are Indonesia, Malaysia and Brazil. In India, pepper is grown mostly in Kerala State which contributes nearly 96 per cent of the production. Other States which produce pepper are Karnataka and Tamil Nadu. Efforts are now being made to cultivate pepper in suitable areas in Goa, Maharashtra, Andhra Pradesh, Orissa and Andaman and Nicobar Islands.

India's exports of black pepper during 1977-78 were of the order of Rs. 50 crore as against Rs. 38.24 crore in 1976-77. During 1977-78 India exported 25,250 tonnes of black pepper as compared to 20,527 tonnes in the previous year thereby recording an increase of 4,723 tonnes. The usual off-take by the east European countries, increased exports to the U.S. and higher unit price realisation were the main factors which contributed to the record export earnings from pepper during 1977-78.

The pepper community which was set up in 1976 with its headquarters at Jakarta has helped the growers to get increased price for their produce. The price of pepper in the U.S. market had risen from 45 cents per pound in 1968-69 to 110 cents at present. In order to bridge the gap between the demand and supply of pepper like rubber, synthetic pepper has also begun to appear in advanced countries. However, it is unlikely that it may compete with the natural pepper. About 80 per cent of pepper produced in India is exported to foreign countries. The principal buyers of Indian pepper are the USSR, the U.S.A., Canada, Italy and Czechoslovakia. There is growing demand for Indian pepper in the International markets. However, the

quantity exported is not steady. It ranged from 17,970 tonnes in 1970-71 to 31,648 tonnes in 1973-74 and 25,250 tonnes in 1977-78. The price of black pepper has increased steeply in the recent years. The export earnings have therefore gone up inspite of the reduction in the quantity exported. The current price of black pepper is attractive and is an encouragement for growers to increase their production.

Old System of Cultivation

In Kerala more than 75 varieties of pepper are under cultivation. The most popular high-yielding varieties grown in the State are Karimunda, Kalluvally and Kottandan. A hybrid variety of pepper by name of 'Panniyur-1' was released for cultivation in the middle of 1960s. It is an early bearing variety with high yield and good quality. The present system of pepper cultivation is age-old and requires scientific orientation. It is grown as a mixed crop on live standards mostly in the homesteads with very little care and management.

More than 50 per cent of the vines have outlived their economic period and are in the senile stage. Fatal diseases such as 'slow wilt', 'quick wilt' and 'foot root' are rampant throughout the State. As scientific cultivation practices are not followed by the farmers, even the healthy vines do not get their full nourishment for normal growth and yield. Ironically, the average yield of pepper vines in Kerala which is the birth place of this golden vine, is the lowest in the world. In other major pepper-producing countries like Malaysia and Indonesia, the average yield ranges from 650 kgs. to 1550 kgs. per hectare. The methods of crop raising followed in these countries are quite different. They grow pepper vines mostly on dead standards, give well-balanced fertiliser doses, adopt timely plant protection measures and maintain the gardens only for 15—20 years.

Germplasm Collection

The pepper research station at Panniyur in Kerala has so far collected and maintained over 900 accessions of pepper vines which are grouped into 87 distinct varieties or types of pepper (including exotic types) either cultivated or found in a wild form. This is the richest germplasm collection of pepper in the world. Every year this collection is being enriched by the addition of new types encountered in the course of systematic surveys conducted solely for this purpose in pepper growing tracts and natural forests of Kerala State. The wide and interesting variations in characters revealed by the study of plants in the germplasm bank have been useful in evolving new varieties. These studies have helped to identify five local varieties viz., Karimunda, Kottanadam, Balankotta, Kutirally and Kalluvally as superior ones in respect of yield, precocity and other desirable qualities. These varieties have been recommended for large-scale cultivation in Kerala.

An effective technique for the controlled pollination and hybridisation in pepper plants has been perfected at this station for the first time in the history of the crop. Utilising this technique a well-planned hybridisation programme has been instrumental for the evaluation of high-yielding hybrid variety 'Panniyur'. An appropriate technique for the propagation of pepper through seeds has also been perfected. As the vegetative propogation is the common practice in pepper cultivation, detailed studies|investigations conducted helped the station to evolve an economic and efficient method of vegetative propogation and nursery practices for raising rooted cuttings of pepper. Also, a method for the rapid multiplication of sparingly available planting materials of pepper has been developed. It is as a result of this research work that lakhs of rooted cuttings of pepper are being produced and distributed every year by the developmental agencies and private nurseries.

It is encouraging to note that pepper cultivation in India has now received the attention of the Government. Systematic development measures centred around both intensive and extensive cultivation are now being implemented as a part of the Plan strategy. 'Panniyur-1'—the wonder vine has been chosen for large scale multiplication and distribution as planting material. Central nurseries covering an area of about 80 hectares have been established with this variety in potential areas for development. The nursery has the capacity to produce about 4 million rooted cuttings every year. About 300 demonstration plots have been established in different areas to popularise 'Panniyur-' among the growers.

Package Programme

Another important measure introduced is the package programme to help intensifying pepper cultivation in Kerala State. This programme covers about 30,000 hectares under pepper cultivation. Under the programme about 11,000 demonstration plots have been laid in this area to educate the farmers about scientific way of manuring and protecting the plants There is also a provision to replace the dead, old and diseased vines with the high yielding variety, 'Panniyur-1' as also to rejuvenate the existing gardens

Besides exporting black pepper, further processing to suit the consumers requirements in the western countries have not received our serious attention Popular pepper products such as pepper oil, pepper oleoresins and white pepper are not prepared in our

country to any appreciable extent The export of these products is quite negligible. One of the reasons may be that pepper processing units have already been established in the consuming countries and they require only the raw material—black pepper. But it is necessary that we should also develop our processing industries to produce pepper products for exports

The Central Food Technological Research Institute in Mysore has recently developed the technology for the production of dehydrated green pepper and buff-coloured white pepper. These products are made for the first time in the world. Both the products are naving a good appearance and better quality than black pepper. Already a few small units have been set up in Kerala and Karnataka and they have gone into production. It is gathered that dehydrated green pepper has already been accepted by a few European countries and there would be good demand for these products.

The limiting factors in the pepper trade and the high prices of black pepper due to high cost of cultivation and the poor average yield. The production cost can be brought down by adopting scientific method of cultivation and using high yielding varieties. What is lacking on the export front is sound propaganda on new pepper products and market intelligence. This can be partially achieved by the State Trading Corporation and India Trade Missions abroad. Deputation of Trade Teams to foreign countries and participation in the international fairs will also help to great extent to study the demand pattern of pepper as well as publicise our products. There is therefore urgent need for research, development and export organisation for increasing the productivity, production, profitability and export of pepper and pepper products in sizeable quantum.

While the research station at Panniyur has done very commendable work in the evolution of varieties, standardising the methods of propagation and nursery practices and evolving pest-control measures on one side and yield barriers/constraints have been identified on other side, a scheme involving the extension and advisory services needs to be launched. This scheme should aim at dissemination of all scientific information on cultivation to the planters through its field units. An extension system more or less similar to 'Training and visit system' advocated by the World Bank Consultant Mr Daniel Benor should be launched.

As a prelude to the full-fledged research on the agronomic and soil science aspects, fertiliser trials to evolve suitable fertiliser schedules should be conducted both in the research station and cultivators' fields. A research project in preservation and processing techniques and finding out new end-uses of pepper should be initiated to help the growers and consumers. The scheme for establishing a full-fledged research wing for conducting adaptive research in pepper needs to be formulated.

Marketing and Credit

Problem of marketing has been very serious. The small growers suffer from the disadvantages of unorganised marketing system. The problem may have to be approached through involving the growers and forming their cooperative societies. The management of the societies should be supported by required professional management and infrastructure. The market survey should be a continuing feature and new markets must be captured for which the consumers' need should be studied.

Although low level of yield could be attributed to a number of reasons it is felt that the poor state of plantation is because of the non-availability of production-credit. Traders generally disburse loans in cash and kind to meet various types of requirements of the growers including consumption needs and other expenses. These loans advanced at usurious rates of interest are recovered in terms of pepper. The growers are tied to their loans and they have no alternative except to tender their pepper output to their lenders. In the absence of any institutional agency to provide credit without any security (and no loans whatsoever for consumption purposes) the growers have no other option except to approach the moneylenders/traders who are always obliging. As a result the grower has to receive whatever unremunerative price is offered for the produce.

The financing institutions would have to be involved in financing the development projects such as promoting greater use of fertilisers and pesticides, setting up preservation and processing units, purchase of electric driers for pepper curing, construction of curing barns, for itensive cultivation of pepper, purchase of plant protection equipments, for undertaking soil conservation measures in the pepper plantation area, development of ground and surface water resources in the plantation area, establishment of seed-farms etc., The extension agency will have to work out the exact requirement of credit for various purposes including that required for cultivation of pepper and the Banks may have to meet the need-based credit requirements in order to wean away the growers from the exploitation. □

Processing Vegetable Oil Seeds

Dr. (Mrs.) Shashi Kumar
Freelance Journalist

Vegetable oils constitute an important item of human diet. Apart from this, they have various industrial applications. The demand for these oils has been rapidly increasing with improvement in the general standard of living, increase in population and technological advances.

However, the supply of this vital food item has not increased in the same proportion, thus creating an increasing gap between the demand and the availability of vegetable oils. This is in spite of the fact that India is predominantly an agricultural country and the cultivation of oil-seeds accounts for around 10 per cent of the total land under cultivation.

India with its limited resources had, therefore, to take various measures to bridge the gap between indigenous supply and demand even at the current consumption level.

Several steps have been undertaken during the last two decades to augment the possibility of resorting to the use of lesser known vegetable oils of Indian origin and to promote their acceptance by consumers and the government. This has been done with a view to ensure quality of edible oil and oilseeds during storage. Although the control of insects is carried out with the use of toxic chemicals, care should be taken to see that no harmful residue on treated oil-seeds is left. Proper application of the chemicals with the right understanding of their properties would lead to successful control of insects.

The conventional edible oils are of groundnuts, cotton seed, sesame, mustard, etc. Apart from these oils obtained from maize (corn.) rice bran and seeds of water-melon have also been accepted for edible purposes. The neglected minor oil fats of forest origin are used for various purposes. Notable among them are the fats of Mahua, Neem, Kusum, Karanja, Kokum, Dhups, Mango kernel, Khankau, Nahor, Sal-seeds etc. Thus, it has helped in exploiting unconventional oil-bearing materials to augment the supply resources in this country.

Fat from oilseeds, Kokum and Mango kernel have good potential for use for human consumption after refining. These fats are used by local people for edible purposes and are being exported to different countries where they are used as cocoa-butter and even as its substitute.

In order to meet the present shortage of edible oils in the country, vegetable oils like soyabean oil, sun flower oil, palm oil and rapeseed oil have to be imported. The quality of such imported oils is regulated by specifications laid down by the Indian Standards Institute and stipulations laid under the prevention of Food Adulteration (P.F.A.) Rules of the Ministry of Health.

It is well known that oilseeds containing more than 20 percent oil are to be subjected to a cumbersome and expensive series of processing steps to recover the highest possible amount of their oil content. After the preliminary treatment, the high oil-content oilseeds are reduced to small particles by passing them through roller mills with corrugated rolls. The rolled seeds are heated to a set moisture content in a special cooker conditioners before expression in expellers or continuous screw pressures.

During the pressing process, the seed mass is subjected to increasingly higher pressure in oilseed to attain temperature ranging from 160° to 190° centigrade in the expeller cage. Under these conditions, a good portion of the oil content in the seed mass is removed. If the pressing process is not carried out to completeness, the expeller cage has a residual oil content or many oil cells intact.

(*contd. on page* 35)



Export Potentialities of Coffee

Dr. Badar Alam Iqbal
UGC Post Doctoral Fellow
A M.U. Aligarh

COFFEE is a cardinal commercial crop among plantations next to tea and is also an important beverage. Indian Coffee ranks 12th, accounts for nearly two per cent of the total world coffee exports and provides employment to 2.5 lakh persons.

The Chief Coffee growing states in India are Karnataka, Kerala and Tamil Nadu. The Karnataka state alone accounts for 69 per cent of the total production of coffee in the country followed by Kerala 22 9 per cent, Tamil Nadu 7.1 per cent and remaining 1.5 per cent shared by other states such as Andhra Pradesh and Maharashtra.

The production of coffee has increased from a bare 18.5 thousand tonnes during 1950-51 to 125 thousand tonnes during 1977-78 which is a rise of 627 per cent during the period of 28 years. While the domestic consumption of coffee has increased to 52.8 thousand tonnes from only 17.9 thousand tonnes during the same period. This indicates, that the rate of increase in production is much higher than the rate of increase in the domestic consumption. This leads to a conclusion that the coffee has bright future in the field of exports.

Coffee Exports

India entered in the international coffee market for the first time in 1948-49. Since then our coffee exports has been rising considerably. It is evident

from the available statistics that the quantity exported had gone up to 70 thousand tonnes in 1977-78 from 2.71 thousand tonnes in 1950-51 indicating an over-all increase of 2573 per cent. Similarly the value earned had increased from Rs. 1.34 crore in 1950-51 to Rs. 191 crore in 1977-78 showing an overall rise of 14253 per cent. It is also estimated that value earned from coffee exports will go up to Rs. 200 crore during 1978-79. The rate of increase in value earned was much higher than the rate of increase in quantity exported. This was because of the higher price realisation of coffee in the world market. The unit value realisation showed a considerable rise in 1977-78 as compared with the crawl of the previous years.

The export earnings from all items have gone up by 795 per cent from 1950-51 to 1977-78, while export earnings for coffee had increased by 141 per cent during the same period. It is interesting to note that the rate of increase in total export earnings is much higher than the rate of increase in total export earnings of coffee. Further, the share of coffee exports in India's total exports had also increased from the lowest point of 0.22 to 3.55 per cent during the last 28 years. All these reveal that coffee has bright prospects in the world market.

Where Exported ?

Indian coffee is exported to over 33 countries of the world, the main importers of coffee are USSR, USA, Yugoslavia and Germany. USSR is the largest buyer of Indian coffee, in the world followed by USA, Yugoslovia and Germany (FRP). Among non-bilateral member countries USA ranks first followed by Yugoslovia and Germany, while in the group of bilateral non-member countries USSR is the largest importer of Indian coffee followed by Czcholovokia. Similarly among non-bilateral non-member countries Kuwait stands first followed by Greece, Saudi Arabia and UAE.

Compared to the world coffee exporters like Brazil, India exports very little. But whatever India exports is significant in earning foreign exchange for the country. Although we have earned a reputation in the world market for its quality coffee and timely supplies the quantity exported is not so substantial as compared to indigenous production and world demand. This was because of controlled mechanism of quota system, by the International Coffee Council. The system was removed for some time and during that period India's coffee exports had doubled.

During the last session of the International Coffee Organisation held at London it was generally decided to do away with the old methods of differentiation between quota and non quota countries, member and non-member countries and new market and old market system. This should help the country to export more for India was one of the few countries which had done well on the export front during the last three years. Moreover, India registered a 660 per cent rise in the foreign exchange earnings.

The problem of coffee exports is not peculiar to our country alone. All major exporters are also faced with it, not due to inadequate production, but the seemingly open joint efforts to reduce supplies and boost prices by the exporting countries. But actually having aggressive competition with each other in secret, to sell coffee at discount rates. In such circumstances the recently established special cell has a special responsibility to launch an intensive drive to increase direct exports.

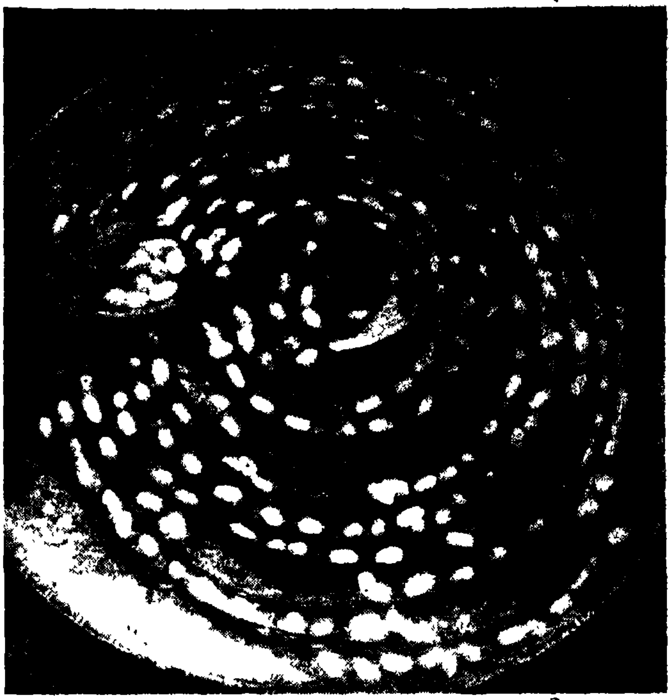
Added to this, as there is already a glut in the International market and that the supplies should be rationalised to suit world absorption, it is of paramount significance to build home market.

Inaugurating the Annual Conference of the United Planters' Association of Southern India, the Union Finance Minister has rightly pointed out that only a common policy of export countries would enable the highest possible unit value realisation for planation crops such as coffee and tea. He added that while export performance is improving, there is no reason why India should not do much better.

The recent upward trend in coffee prices in the world market has prompted the Union Government to rise the export duty to Rs. 750 a quintal from Rs. 400 a quintal. This means the Government is so much keen to mop up the bulk of the extra gain ac-acording to the industry. It is fully borne on tea last year. It took a long time first to reduce it and then to abolish the same. The result was that tea exports suffered grievously last year. It is due to this bitter experience that coffee exporters are scared and they may have to meet with the same fate as has fallen to Indian tea exports.

In a recent study conducted by Institute of Foreign Trade of India, it was found that irregular supplies, non-competitive prices, high freight rates, lack of infrastructural facilities and the like are coming in the way of industry raising its exports to such markets as the USA, Canada and the EEC countries. The need of the hour is to stablise coffee exports to the traditional markets and simultaneously cultivate new ones. The Coffee Board, in collaboration with the Council of Applied Economic Research has formulated an ambitious perspective plan envisaging a considerable rise in the area of cultivation of coffee in the traditional areas as well as in non-traditional areas. ☐

Sericulture The Queen of Rural Industry



Dr. (Mrs.) G S. Vijayalakshmi
Research Associate,
Sri Parasakthi College for Women
Courtallam

SERICULTURE industry which was virtually closed in Tirunelveli district during 1974 has staged a thunderous come back It is now a period of renaissance and the district is going ahead to the zenith of its achievement. The recent announcement by the Chairman Central Silk Board to establish a Research Centre at Tenkasi is a matter of jubilation to the silk worm rearers in the district.

The history of sericulture movement in this sleepy agricultural district reveals the tremendous growth of this industry in recent times.

With the advent of the formation of linguistics states, Kollekal area famous for its silk worm rearing and production, went to Karnataka. Tamilnadu government then chose Courtallam in Tirunelveli district as the seat of sericulture in the state. Courtallam has a medium temperate whether well suited for the rearing of silk worm.

A demonstration silk farm was started at Nannagaram village at the foot of Western Ghats on the Tenkasi-Courtallam high-way in 1960 by the Industries Department. The concept of dry cultivation of mulberry, a paying industry failed to evoke any response then as the turn-out was not remunerative. Sporadic muberry cultivation made so far did not make any impact.

However, the years between 1970 and 1974 witnessed a silent revolution. When all the hopes of mulberry cultivation were burried once for all the experts discovered that irrigated mulberry would give more income than any other commercial crop. It was anticipated that the industry would generate lot of employment opportunities in the rural sector.

This new concept brought about a major breakthrough in the field of sericulture and like the legendary phoenix the industry rose from its ashes. From then onwards it is a story of slow but steady increase in the area cultivated and also the production of cocoons

From a mere two acre plot in private holdings in 1972-73 it has risen to 350 acres in 1978-79 providing employment to more than 1200 persons. An additional 650 acres will be brought under mulberry production this year. The department has got an ambitious programme to increase the acreage to 5000 by 1982.

In 1975-76 the cocoon production had reached 990 kilograms having mulberry cultivated in 10 acres in six villages. In 1977-78 it went upto 6864 Kgs. of cocoons reared from the crop raised in 100 acres. The value of silk production from these cocoons had also gone up in a meteoric rise from nil for 17 years to

s. 17,500 in 1975-76 and jumped to Rs. 1.25 lakh 1977-78 and Rs. 3.75 lakh in 1978-79. These ipressive figures were achieved from a point of no turn for an expenditure of one lakh rupees and after virtual closure of the industry. This success story ight serve as a beacon light for other planners in esh areas.

Tamilarasu (26) a B.Sc graduate in Krishnaperi llage about 20 kms. from Tenkasi has taken up seri-ilture with missionary zeal and stands as an example be emulated. Sheer hard work and concentrated tention have inculcated self confidence in this young an. Taking up mulberry cultivation in 40 cents of nd he started rearing silk worm on September 4, 1978 ith 70 egg layings. (a laying contains about 300 to)0 eggs.). The first trial brought him a net profit of s. 531. The statement given by him of his cost and ofit is as follows :

Cost of 70 egg layings @ 20ps per laying	14.00
Fertiliser	23.00
Total wage for plucking leaves for per harvest . . . . . . at	70.00
Cartage for lifting cocoons to reelin centre	02 00
Total expenditure . .	109.00
Weight of cocoons produced 32 kgs.	
Cost of cocoons for 32 kgs. @ Rs. 20 per kilogram	640.00
Total Expenditure	109.00
Net Profit	531.00

The rent or cost of the 40 cents of land is not in-uded. Tamilarasu has croppe 7 harvests in a period barely 10 months and earned a total net profit of s. 2560. He has plans to tripple the area of culti-tion.

Ahamed Meeran in Pettai, Tirunelveli is another riculturist connected with this industry for the past ur years. He has two acres of mulberry crops. hough he is chary of giving out his full profit figures has accepted his three weeks income to be more an Rs. 600. He complains that labour for picking ulberry leaves is not readily available as it is in ddy fields. There is perhaps no scope for pinch-g mulberry leaves and selling them as stolen arti-es. But a promise of higher wages might obviate e obstacle.

V. Kumar (28) is another, a graduate, who has enthusiastically started a reeling unit at Vasudevanallur, predominently a handloom weaving centre. He has employed eight high school educated harijan girls.

The lending institutions are hesitant to give financial assistance to the silk farmers and the reelers. Eighty nine applications seeking assistance were sent to 24 banks in the district recently and they are pending clearance. The recommended loan amount for each application is Rs 2,200 only.

The Indian Overseas Bank being the lead bank of the district submitted a credit plan with an outlay of Rs. 78.89 crore for a period of three years from 1978-79 to 1980-81. For the development of activities allied to agriculture such as dairy farming, poultry, sheep rearing, fisheries, sericulture etc. a sum of Rs. 2.98 crore has been earmarked. Silk worm rearing in this, occupies Rs. 17.50 lakh which will finance 500 units. In 1979-80 one hundred and fifty units ought to be given financial assistance of Rs. 5.25 lakh.

But the figures from the department reveal that during 1978-79 only 40 units have been given assistance and a sum of Rs. 84,000 has been disbursed.

During 1978-79 the State Bank of India has given Rs. 33,000 as financial assistance to 15 silk farmers, Canara Bank Rs. 22,000 (10 persons), Pandyan Grama Bank Rs. 22,400 (12 persons); Indian Overseas Bank Rs. 66,000 (3 persons).

"The credit plan aims to increase the employment opportunities for the local population through the promotion of activities allied to agriculture, cottage and rural industries, trade and commerce and other services" says the plan report.

The report adds, "the plan has been prepared at the grass root level with community development block as the unit of planning. The implementation of the plan will speed up rural development by making use of local resources and providing employment opportunities to the unemployed and under employed among the rural population of the area".

The plan proposes to bring 200 hectares under mulberry cultivation in this district during the plan period by the end of 1980-81 financial year. It has further

suggested that to smoothen the purchase of cocoons, one reeling unit with two basins has to be started for every 15 acres with a capacity to deal with 2500 kgs. cocoons per annum.

Though the lending institutions are stingy in their assistance the department with its meagre source of men and material is doing a lot for the growth of the industry.

Right from the time of the farmers expressing their willingness to take up sericulture the department becomes the god father and maintain an uninterrupted supply of silk worm egg layings and mulberry seed cuttings. Above all the tie-up arrangements of production and marketing by the department is a major contributing factor for the popularisation of sericulture.

The massive farmers training operations under the Intensive Sericulture Development Programme (ISDP) have created an awareness among the farmers. So far 66 farmers or their representatives have been trained and another 57 are undergoing training. Each of the farmer trainee is being paid a monthly stipend of Rs. 75 for three months and they are supplied with necessary tools to start the silk worm rearing. So far a sum of Rs. 33,887 has been spent by way of stipends.

To obviate the financial difficulties of the faarmers taking up this trade the department has already provided a total sum of Rs. 23,097 against 69 cases as 25 per cent subsidy under the ISDP. The department has also trained 16 persons in the technique of reeling and has given them 25 per cent subsidy for appliances and construction of work sheds.

A drive through the villages around Tenkasi reveals paddy cutivators concentrating on mulberry. One can see acres and acres of mulberry and hear the thud of the diesel engine irrigating the green plants.

Thirty-five villages around Tenkasi are engaged in this trade. It is not an uncommon sight to see the entire families from kids to the adult taking part in the rearing of silk worms. The worms are looked after with parental care.

Krishnaperi, Salaiputhur, Poolankulam, Koiloothu are some of the villages where the work has established itself during the past few years and now gaining momentum as more and more farmers are coming under the 'silk umbrella'.



Silk reeling process

All cocoons produced in the villages had formerly to be taken to Tenkasi or other reeling centres. Now seventy farmers have jointly started a unit of their own at Adaikalapattinam village.

To disseminate knowledge of sericulture and to offer timely service, Extension Centres have been opened at Sankarankovil, Vasudevanallur, Kadayanallur, Kurinjakulam and Adaikalapattinam. The field staff is providing good service to the silk farmers.

While vast expansion of this agro-based industry is taking place, cooperative societies of the silk farmers have been formed and they have done commendable work within a short span of time.

The Tirunelveli district silk farmers industrial Co-operative society affliated to its state organisation was formed on March 9, 1979. So far it had collected 375 kgs of silk and marketted it. The society has helped getting subsidy of Rs. 10,000 from the government for 40 reeling units. Twenty-four units have

(Contd. at page 19)

Silk Industry in North-Eastern Region

SILK industry, the earliest cottage graft of the North Eastern India is showing signs of gradual improvement after a long period of decay and neglect. The progress is largely credited to a series of schemes initiated by the Constituent States and Union Territories on the one hand and the North Eastern Council (NEC) on the other. With the world monopoly in respect of golden fibre known as Muga silk, this region accounts for an annual production of about 250 tonnes of silk in the total annual national production of 3000 tonnes of all varieties of silk. Silk industry which employs about 70,000 persons of this region will shortly emerge as the largest employer of rural manpower.

The NEC embarked upon a programme of development of sericulture in NEC Plan by sponsoring schemes like setting up of seeds station for Muga, mulberry and oak tasar for providing quality seeds to seed rearers, setting up of pilot extension centres for all the varieties for demonstration and training of rural silk rearers and offering training facilities for the staff in sericulture Training Institute at Titabar in Assam.

As many as 8 schemes were undertaken in the sericulture sector during the 5th plan sponsored by the NEC. All these schemes which envisaged a total expenditure of about Rs. two crore have by and large been implemented satisfactorily. It has been estimated that about 90 per cent of the total outlay has already been spent with physical achievement varying from 40 to 80 per cent in the individual schemes.

The scheme for Expansion of Training Facilities in the Sericulature Training Institute at Titabar in Assam has been implemented with some success. The scheme which envisaged an expenditure of Rs. 12 00 lakh was subsequently raised to Rs. 20.90 lakh. The institute in the year 1977-78 imparted training to 56 persons while another batch of 61 persons were trained in the following year. More than 150 field level officers were given training in the refresher course during the last five years.

The scheme for Regional Foreign Race Seed Station (Mulberry) at Ummulung in Meghalaya implemented with an outlay of Rs. 18.00 lakh is also showing satisfactory results. The rearing of silk worms has started and the mulberry plantation is being maintained More than 70,000 layings have been preserved for distribution. Some seeds have been distributed to Arunachal Pradesh and Assam from this Station which covers an area of 38 acres.

The Regional Oak Tasar Seed Station established at Gwaltabi in Manipur with a total outlay of Rs. 1.800 lakh has been producing basic seed cocoon and layings which have been distributed to the Constituent Units Last year, the Station produced 40,000 layings and 1 60 lakh cocoons.

The Regional Parent Stock Station at Ukhrul in Manipur raised 250 disease free layings and raised 0 17 lakh cocoons of hybrid type. The Regional Parent Stock Station at Garampani in Meghalaya produced 1180 layings and 9100 seed cocoons last year

NEC also sponsored survey in all the Constituent Units to find out scope for oak plantation. On the basis of the survey, schemes have been drawn up for nursery on oak tasar, grainage-cum-training centres and seed preservation centres. A total amount of Rs. 6.56 lakh had been spent which marginally exceeds the anticipated expenditure of Rs. 6.54 lakh.

The high altitude Muga Seed Station established at Khorongma in North Cachar Hills in Assam is now

in the **preliminary stage** of development. Som and Sualu plants in an area of 25 acres have been planted here.

For increasing the production of mulberry, eri, muga and oak tasar cocoons, 42 Pilot Extension Centres were established during the 5th Plan period. The centres are in various stages of development. Among the 3 centres in Assam, the Ratanpur Centre was organised with 50 rearers. Eleven pilot schemes of muga with plantations of 5,000. Som and Sualu seedlings in 100 acres of land in each centre have also been taken up in all the States other than Assam. The Plants will be ready in 5/6 years time. It is expected that 30 lakh cocoons will be produced annually in each centre.

Five Pilot Centres have also been established in the States/Union Territories other than Tripura and Manipur. Each of these will carry multiplication of seeds training, extension work and serve as nuclear expansion of oak tasar. It is expected that—20,000 cocoons will be produced per acre and the total production in the 5 centres is expected to be of the volume of 3 lakh of cocoons

Pilot Scheme for Eri envisages production of 20,000 DFL at the initial stage for supply to 100 families. There are 12 numbers of centres organised in all the constituent units with each centre supporting 50 rearers. Altogeher 1000 kg of eri cocoons have been produced by these centres. In view of the importance of weaving industries in the North Eastern Region, a certificate course for admitting trainees from the constituent units has been opened at the Assam Textile Institute at Gauhati. Tripura has also taken up an ambitious programme for development of mulberry silk industry in the State. A reeling unit at a cost of Rs 4,00 lakh has been established for mulberry cocoons. □



Silk sarees are ready to wear

Sericulture The Queen of Rural Industry

(Contd from page 17)

been already started and are functioning in Panagudi, Karivalamvanthanallur, Vasudevanallur, Adaikalapattinam and Kurnjakulam

The society aims at building a rapport between the silk farmers and the officials and technicians. The society has 273 members and a paid up share capital of Rs. 8500/-.

The necessary appliances such as bamboo baskets, wooden trays needed for this industry are being manufactured locally and this wing provides employment opportunities to the rural artisans. The society has produced Rs. 10,000 worth rearing appliances and is keeping it ready to meet the silk farmers requirements. It has been planned to form separate Primary Silk Farmers Societies with a membership of 60 at Adaikalapattinam and Kurinjakulam.

This remunerative agro-based industry has yet to percolate to the marginal and poor farmers. An enthusiastic sericulturist suggested that the Central Silk Board (CSB), through the government of India should seek the assistance of world bank. Children have lot of fun watching the worms while the elders Profit. The day may not be far off when ladies would vie with each others to purchase a 'Tenkasi patu saree' □

Tasar Industry of Bihar

Dr. R. P. Verma
Deptt. of Commerce
Ranchi University

BIHAR is the biggest producer of Tasar Silk in the country. In the national output of about 5 lakh Kgs, the State with the current level of production at 2.7 lakh Kgs. accounts for 55 percent of the total output.

Tasar is the forest based industry. In Bihar it provide employment to over 65,000 families. Most of them belong to Scheduled Tribes living in 2,655 villages of 97 blocks in eleven districts. The main centres are—Singhbhum, Santhal Parganas, Bhagalpur, Hazaribagh, Palamau and Ranchi. At one time Bhagalpur was the important centre on the Chinese silk road. Its name is associated with legendry Chand Saudagar. Chinese vessels carrying silk used to sail up the Ganga right up to Varanasi in the olden days.

Today, Bhagalpur is the largest handloom Tasar weaving centre in Bihar. Besides reeling and spinning, weaving of Tasar also is mostly carried out in the decentralised sector. This sector provides employment to nearly 10,000 weavers living in rural and semi-urban areas. The State Government has set up a spun mill in Bhagalpur for utilising the tasar waste and spinning of spun silk and nail yarn by the handloom weavers.

Tasar industry is now gaining recognition as an important export-oriented rural industry. India exports Tasar goods worth Rs. 3.5 crore annually and Bihar accounts for an important portion of this. Tasar silk is, perhaps, one of the very few industries which export over 25 percent of the gross value of the total output in the country.

The Central Silk Board has initiated a number of Schemes directly under the Central Project in addition to the programme initiated by the State Government. In pursuance to the recommendation of the Planning Commission for modernising seed organisation of the Tasar Industry in Bihar a pilot extension-cum-training centre was opened at Kharsawan. The Centre is intended to effectively translate the research achievements into the field, demonstrating the improved techniques of rearing and planting of food plants. Disease free seeds required by the State Pilot Project are also made available to them.

According to the crash programme for modernisation of Tasar rearing in Bihar, formulated by the Central Silk Board, 20 pilot extension-cum-training Centres were started last year. Another eighty Centres would be added to this during the Sixth Plan period. This would go a long way to make the State self-sufficient in the matter of disease free seed. Considering the vast scope of Tasar, the planning Commission working group on sericulture has fixed a national production target of 880 tonnes in the Sixth Plan.

The pilot extension-cum-training centres of the Silk Board would produce 40,000 disease free seed at each centre, of which 8,000 would be directly supplied to the rearers and the balance to Pilot Project Centres of the State. It would thus be possible to produce over three lakh disease free seed for distribution to about 3,230 rearers.

The productivity of Tasar in the Country is less than 20 cocoons per laying. With improved techniques of rearing evolved by the Central Tasar Research Station, an yield of 60 to 70 cocoons per laying would be possible. In this way three fold increase in production of Tasar Silk and the earnings of the Tribal people engaged in this trade can be achieved.

One of the main obstacles responsible for the existing low production is scarcity of food plants in the vicinity. As a result of deforestation, the tasar food plants have been depleted forcing the rearers to go deep into the jungles for rearing the silk worms. According to Statistical datas available tasar plants are spread over an area of about nine lakh hectares. But most of these are in the interior forest areas which cannot be utilised by rearers.

Proper maintenance of the existing food plants and extension of the availability of the food plants by undertaking additional plantation, availability of disease free layings and marketings of cocoons are the main problems.

The State Government is running 17 Stations, 44 substations and 3 marketing organisations for the supply of disease free layings and purchase of cocoons. The tribals are mostly cocoon growers and not rearers and spinners.

The Central Tasar Research Station was established in Ranchi in 1964, for the development of Tasar Silk industry in Bihar. Later on an extension Centre was started at Hatgamaria. A raw Silk material bank for Tasar cocoons was established by the Silk Board at Chaibasa, to ensure fair price to the Adivasi rearers, prevent exploitation of the rearers by the middlemen and to make available the tasar cocoons waste at steady price to the handloom and Khadi Silk Weavers. □

Poultry Farming in Assam

Dr. T. N. Saikia & K. Gogoi
Agro-Economic Research Centre for North-East India Jorhat

POULTRY farming on commercial and scientific line is a recent enterprise in India. The villagers have been keeping indigenous chicken for centuries as a backyard venture and rearing them under semi-natural conditions mainly for their domestic consumption with little commercial motive

Even before independence the British Government paid attention to develop poultry industry in India The Royal Commission on Agriculture in India in 1927 under the Chairmanship of Lord Linlithgow stressed the necessity of developing poultry farms as a branch of agricultural industry. Attempts to improve the poultry industry in India were also made by the Christian Missionaries at Etah in U. P ; Katapadi in Tamil Nadu, and Surat in Gujarat. Later on other States also had taken gradual steps to improve the poultry industry. During the World War II poultry production was also encouraged under 'grow more food' campaign to supply nutritious food for the armed forces and a few farms were established for the purpose. After the invention of incubators and prophylactic measures to control and cure poultry diseases poultry industry has been placed on a commercial footing

In Assam, particularly in rural areas, poultry keeping has been practised as an age-old enterprise mostly by Muslims, tribals and certain backward communities. Rearing poultry (chicken) is in general a social taboo for the caste Hindus living in the villages of Assam. However, the situation has changed now and poultry keeping is no longer a disrespectable occupation to any caste or community particularly in urban areas. The people in villages keep poultry consisting of 5-10 indigenous birds and practically very little is spent for such farms. The conditions of feeding, housing and management, etc. are generally not satisfactory. Such a farm is generally a subsidiary farm occupation. In view of increasing demand for poultry products, some enterprising educated young persons have come forward to adopt this occupation. The Government of Assam has introduced poultry development programmes initially through the Community Development Blocks in order to develop poultry industry as a subsidiary occupation among the weaker sections of the rural people The crash scheme of the Government of Assam and the schemes of F A.O , U N. under Applied Nutrition programme have contributed considerably for the development of poultry industry in Assam with attention to breeding, disease control, feeding and marketing of eggs and birds, etc.

According to All India Livestock Census, the poultry population of Assam shows a noticeable decline during the period from 1961 to 1972 as shown in Table 1.

Table 1

Poultry Population including fowls and ducks in Assam

Year	Population (In thousand)	Percentage Increase/ decrease, over 1961
1961	9,907	..
1966	8,936	—9.80
1972	7,732	—21.94

Although the poultry population of Assam has decreased the egg production has made considerable increase as shown in Table 2. This is perhaps for the quality birds that have been introduced during the recent past.

Table 2

Egg Production in Assam

Year	Egg production (Millions)	Percentage Increase over 1968—69
1968-69 . .	115 00	. .
1973-74 . . .	234 00	+103.48
1974-75 . . .	250 00	+117.89
1978-79 . . .	300.00	+161 74

The Agro-Economic Research Centre for N.E. India undertook a study in 1976-77, on Poultry Farming in Assam. For the purpose, twelve commercial poultry farms located in the urban fringes were taken up.

Eight of them were being kept as primary occupation. There were 18,736 birds of all ages of which 45.10 per cent chicks, 3.90 per cent pullets, 48.81 per cent layers and 2.19 per cent cocks. The total birds comprised of 10.14 per cent Bab-cock, 14.30 per cent Arbor-Acre, 67.25 per cent Hy-line, 8 04 per cent WLH and 0.27 per cent M-line breeds. Most of the farmers adopted the deep-litter system, only 2 of them adopted both deep litter and wire cage system. The wire-cage system was reported to be very costly.

The average value of assets per farm amounted to Rs 75,684. The investment on building accounted for 46.19 per cent, 32.42 per cent on poultry birds, 12.05 per cent on equipment and 9 34 per cent on land.

Output from the Poultry Farms Sizewise

Farm Size	No. of Farms	Value of output (Rs)
Below 100	3	11,687,40
100 — 300	1	13,500.00
300 — 500	3	41,624.00
500 — 1000	2	1,13,760.00
1000 — 3000	2	3,10,945.00
3000 — 5000	--	—
5000 & above	1	5,07,000.00
Total	**12**	**9,99,116.40**

The birds were fed in all mash system. The average quantity of feed required per chick per month is 1.50 kilograms, 2.33 kilograms per pullet, 3 67 kilogram per layer and 4.50 kilogram per cock.

The study shows that nearly all the works are done by the family workers and only 27 66 per cent casual labour was engaged. Out of 12 farmers eleven had taken loans of which 16 97 per cent were advanced by the State Government and 83.03 per cent by the Nationalised Banks.

The per farm net return was estimated at Rs 10,880 67. There were, however, wide variation in net return and this depended primarily on the farm sizes The correlation co-efficient of total return per farm with farm sizes was found to be (+) 0 99 (calculated from Table 3) which shows that there is positive correlation between farm size and total output per farm. The study showed that the farms having birds below 300 have not been able to make any profit which suggests that a very small size farm is not economically viable under the present circumstances.

The production of eggs per layer for Hy-line is the highest being (195), followed by M-Line (190), Babcock (189), WLH (182) and Arbor-Acre (181) Ninty-six per cent of egg produced was marketed and the price of eggs rises in the summer months. The culled birds and old layers were sold out But the farmers find difficulty in marketing of birds particularly the old layers.

Commercial poultry farming is a new venture in Assam. Some educated persons including retired Government officials took up the occupation enthusiastically. But poultry farming in the State received a set back in some years due to scarcity and high price of feed. Facilities for Balanced feed, medicines, vaccine, veterinary services and quality chicks etc within the state are also not available.

So, it suggests for proper arrangements for supply of quality feed at reasonable rates, establishment of hatcheries of hybrid chicks at regional level and efficient and effective veterinary services to make the poultry industry a commercially viable proposition in the State. ☐

Role of Women in Rural Economic Development

Sreelekha Basu
Director, Labour and Employment
Planning Commission

PLANNING and implementation of rural development programme incite an increasing need to study the status and role of women in the country. Inspite of vast promises of equality in all spheres, our women have been dwelling in the clouds of backwardness. The rural women, especially, continue to be neglected in various uplifting programmes. In their domestic life even they are virtually excluded from decision making. The status of rural women in our society cannot be raised until better opportunities of employment and income are thrown up to them. Relevant statistics of the changes taking place in the role of women need be considered to anticipate the future course of action.

Developing countries are characterised by features as low incomes, illiteracy, unemployment, standards of living and conditions of women and children. It is an acknowledged fact that comparatively lower labour participation rates have delegated a secondary position to our women in the country. Currently China has more than 40 per cent of their women in the labour force, compared to only 25 in India. Women in rural areas are mostly treated as more consumers and bearers of children though they do all the household jobs and the farm work thrust upon them. A sizeable number of them live below the level of economic security. Our planning involves extending benefits of development to the poorest, most of whom are in the rural areas. It is felt that any strategy for rural development must recognise the need of a greater role for adult women. Lack of gainful activity among rural women and the erosion observed in their employability, lack of awareness of their legal rights, (e.g. prohibition of child marriage and dowry, provision for divorce, maternity benefits, inheritance of property etc.), the apathetic manner with which they accept an inferior status in a society dominated by the men-folk, are some of the major concerns of our planners of rural development.

A Less Privileged Class

Women in India are treated as a less privileged statra of our society for various reasons. Disproportionate distribtion among men and women in literacy rates, education, enrolment and training for employment, disparity in access to health and medical care between men and women particularly among the poorer sections, serious imbalances in their inheritance and in ownership of property, as also in their labour force participation rates, (differential opportunities thrown up for employment among males and females), and the lack of women's involvement in the general economic and political activities in the country are only a few to mention. However, the need for acknowledging the importance of women's role in making decisions have been well recognised and the requirement of women's organisation with proper dynamism and with a total perspective for initiating changes in the traditional values have been accepted. Voluntary agencies are doing their bit, but have not achieved much yet. The current Plan has made substantial provisions to improve upon the economic and social status of rural women, through specific programme and welfare schemes, as also through special employment opportunities.

We have currently more than 500 million people living in our rural areas, about 49 per cent of whom are women. The female literacy rate in the rural areas has been estimated at 15, compared to about 30 among rural males and 40 among urban females. The total work force in the rural areas has been estimated at 228 million (about 46 per cent of total rural population), of whom about 82 million belong to the fair sex.

Thus with about 49 per cent of the rural population, the rural females comprise only 36 per cent of the total rural labour force.

Labour Participation

However, measures of labour force participation rates, employment/unemployment, etc. among women furnish a distorted picture, as these completely ignore a vast number of women (about 60 per cent in the rural areas)who attend to un-paid domestic duties, and are also engaged in free collection of goods (vegetables, roots, fish, fire wood, cattle food etc.), and in sewing, tailoring, weaving etc. for house hold house, in the maintenance of kitchen garden, orchards and of household poultry, dairy, etc.

They are not considered to be "gainfully employed" by our official statistical system, and they are even categoriesd as "out-side labour force", as they do not "actively seek work". Our traditional society with its strong family and clan connections, is not yet ready to accept that the women may go out and work for wages or salary. The value system of our women, dominated by a long-term fatalism may not induce them to believe that a paid job is desirable in itself, as a means to achieve dignity and status in the family as well as in the society. It is possible that adult females, especially in rural areas, do not voluntarily describe themselves as seeking work or employment through paid jobs, due to various socio-economic reasons. Some of them may not be able to spare themselves from their routine work because of subsistence constraints. However, they definitely contribute towards the family consumption basket. The extent of work put up by them either in terms of labour-input or in monetary terms is not readily available. We have no relevant statistics to evaluate the services rendered by women, though the services rendered by them are not completely ignored while arriving at estimates of our total domestic product. The portion covered under free collection of goods, etc are implicitly taken into account in our domestic product estimates, as we go by the production approach for the commodity producing sectors. But the unpaid services portion are completely ignored in our income-flows accounts, as no quantification of these can be made.

Current definitions and descriptions of labour force, employment/unemployment, gainful activity, etc. need several modifications, if the participation of rural women in income-generating activities and in their contribution towards economic development, is to be properly assessed. Women who are usually busy with domestic work perform other items of work e.g., looking after household poultry, orchard, kitchen garden etc., should not be identified as economically in-active or out-side labour force, in a developing country, with a considerable share of non-monetary economic in the rural areas. They may be termed "marginal workers" There should be some specific and precise criteria, so that the self-employed in unpaid but income-supplementing work is not discriminated. The focus should be on the prevailing situation in the society rather than on inter-national concepts and definitions. We cannot deny that all these women are active and working for family gains, by contributing goods and services for family welfare. In view of the very hours of work put up by women whose income generating activities are completely ignored for the estimation of labour force participation rates, and as we do not have relevant statistics to make an assessment of their contribution in the total labour force, we may at least impute some value to the total number of women and measure the employment-unemployment rates of women, in the rural areas.

The total number of rural women in the age-group 15-59 engaged only in domestic work was estimated at 43 8 million, and those engaged in domestic duties as well as in free collection etc., at 26.6 million during 1977-78. Proportion of rural women in labour force in the same age-group was estimated at 39 per cent, compared to 34 per cent engaged only in domestic work and about 21 per cent engaged in domestic work as also in free collection etc. Thus in the 15-59 age group we had at least 60 per cent of women in the rural areas who were gainfully employed (or were available for work), during 1977-78.

It is well recognised in developing countries that a majority of rural women do not actively seek employment but are avaiable for work, if proper mobilisation of female labour can be organised. For example, when wage employment is created, and necessary initiative and encouragement are provided to our traditional women, as is the Employment Guarantee Scheme (EGS), the Food for Work Programme etc. the shares of women in empoyment are significant, compared to programme like Crash Scheme for Rural Employment (CSRE), which were aimed to benefit the rural poor The EGS which is now in operation in Maharashtra, seeks to provide manual employment to every person seeking such work, on a pre-determined rate of wage, failing which an unemployment allowance would be paid. Labour attendance by end of March 1979 was more than 9 lakh, 57 per cent of whom were females

The experience of the EGS indicates that in low-income households the extra income earned by the women has been vital to cross the poverty line. The initiative in making intended changes in the social outlook must come from the Government itself, in the form of incentives to women who are bound by tradition, and are constrained by established interests bent on preserving the status quo. Women in 15-59 age-group, if not in labour force (except when they are sick or are students) should be considered 'un-used resources'. The Planning Commission has recommended man-power budgeting of female labour force in all block development plans, so that scheme included in these plans could be so designed as to offer a variety of training and work opportunities to women, keeping in view their domestic duties and family responsibilities. In Russia, women are made to work for lesser number of hours in the fields, compared to their men counterparts, on account of the work done by them in the house. A change in the attitude towards life is imperative to ensure that our women gain confidence in their own capabilities and a new value system is accepted by the society.

Empirical studies indicate that the labour market has always discriminated against women. Women have lost traditional occupations "as a result of changes which have transferred productive activity from homes and cottages to factories and machines". Traditional families and communities prevent them from seeking and obtaining proper education and training, as also employment outside the home. New technologies introduced in agriculture and allied activities have ousted unskilled female workers from their traditional jobs. Women have thus been isolated both from outside life and from gainful occupations. In India, work participation rate of women had been falling steadily over a long period from about 34 per cent in 1911 to 28 per cent in 1961. The Census of 1971 grossly underestimated the number of women workers, specially in the rural areas, because it emphasised on counting only the primary workers (i.e. by main activity). According to 1971 Census, the female labour force declined by about 26 million (from 60 to 34 million over 1961-71), compared to an increase of 51 millions in their number. Proportions of workers among rural females registered a fall from 31.4 in 1961 to 13.1 in 1971. Planning Commission obtained a better estimate of female labour participation rate from the data collected by the National Sample Survey (NSS), for 1972-73. This estimate of 28.6 per cent was only partially higher than the 1961 Census rate of 28 per cent. The labour force participation rate for rural women was estimated at 37.7 during 1972-73, compared to 31.4 in 1961 Census. However, these two are not strictly comparable as the Census rates are based on "usually employed" persons, while NSS rate relates to the current activity-status.

However, a very large proportion of the employed females in the rural areas, engaged as unpaid helpers in family farm and non-farm enterprises, and working full-time or part-time, do not receive any cash payment in lieu of the work performed. They work for food and shelter like other members of the family and are not considered "self-employed", as they do not have a share in the earnings of the enterprise, for which they work. In all fairness, as this group of workers are not getting the prevalent compensatory wages for the work performed by them, they may be categorized as "bonded" with the household. The only difference between the "bonded" labour and "helpers" is that, the former is not free to work for others (except to whom she is bonded), while the letter are mostly free to go out and look for their livelihood elsewhere, but do not actively seek work as they are bound by traditional rules. As this group of unpaid helpers do not have a share in the earnings of the enterprises, their contribution in the income generated by the family enterprises can not be separately evaluated in monetary terms. In factor-income estimates, their share of the total output are clubbed with "income from self-employment", though as per activity status, they are not considered as "self-employed". Due to non-availability of relevant statistics, no imputation can be made about their wage or salary receipts, as we have neither any record of the prevailing wage-rates for different types of occupations in which women are engaged, nor of the average hours of work put in by this group. Thus, the role and participation of women in economic activities in rural India, are grossly distorted. As such a more realistic approach would be necessary to assess the extent of income/earnings accrued to them and the impact of their participation in the development process.

The problem also needs to be studied from a sociological angle. Social awareness among the vast majority of our women-folk have to be created. Plan and non-Plan activities would have to be made available to them and suitable motivation and proper incentives offered so that they may willingly come forward to take up self-employment schemes which do not clash with their routine house-hold chores.

Our current Plan (1978-83) has high-lighted the importance of increasing the share of the benefits of the various rural development programme going to women, both in the terms of employment, and earnings. In the small Farmer's Development Agency Scheme, Operation Flood II and other schemes on animal husbandry, poultry, fishing etc; the Integrated Guarantee Rural Works, the Antyodaya Scheme, the

Khadi and Village Industries Schemes, and even in the Revised Minimum Needs Programme, the stress has been on women beneficiaries. But no meaningful statistics on the income and employment effects of these Schemes relating to the beneficiary households, not to mention of benefits accruing to women in particular, are available. The Planning Commission has recommended setting up of a data collection system with proposal for disaggregated statistics for the share of women in the benefits derived from these Schemes initiated for rural development. Similar recommendations have been made by the Commission about Block Development Plan Statistics, where manpower planning and budgeting would be taken up, separately for men and women, along with an evaluation of the progress towards full-employment policy. It has been stressed that as potential supply of women workers in rural areas are usually much higher than actual ones, it would be necessary to keep in view both the quantitative and qualitative aspects of their labour supply as their mobility and training are restricted. Another important suggestion has been to collect wage-rate statistics from wage-earning households in the Community Development (C.D.) Blocks, along with employment data, separately for male and female workers. Thus a fairly comprehensive recording system involving all households in the Blocks covered by B. D. Planning (or of worker-households in the C.D. Blocks), would go a long way in filling up the gaps in relevant statistics relating to participation of women in economic activities, in the rural areas.

Traditional distinction between men and women's work has been on the increase in India, inspite of increase in the absolute number of women entering the labour force. The Planning Commission feels that in the past, women's "role and potential in agriculture and in rural development had not been adequately assessed and appreciated", and that if women are properly trained and made aware of the technological advances in agriculture and allied activities, the gain in terms of productivity and production would be substantial. Technological developments in agriculture and allied fields have played their role in rejecting rural females from their traditional employment, as also in occupational segregation, which can be vertical and/or horizontal. Men are commonly employed in the upper echelon and women in the lower grade occupations which is known as vertical segregation, horizontal segregation exists when men and women workers are engaged in different types of occupation. Biases are often at work to prevent female workers join certain types of jobs. In rural areas, specially among the poorer sections, we have mainly horizontal segregation of occupation. Among specific agricultural operations, women are mostly engaged in transplating, weeding and harvesting, while ploughing operation is largely done by men-folk along with harvesting. Even in advanced States like Punjab and Haryana, we hardly find any woman driving a tractor or operating the mechanical harvestors. Further, men work for more days as compared to their women counterparts, both in argicultural and rural labour households. Even children, (persons below 15 years of age), work for more days as compared to their women counterparts, both in agricultural and rural labour households. (This confirms our earlier statement relating to non-inclusion of women who are engaged in domestic work along with free collecton etc. in the "labour force"). NSS Rural Labour Enquiry (1974-75), estimated that "usually occupied" women in agricultural labour households had worked for only 179 days during the year, and were unemployed (due to want of work) for 119 days. They were not at work due to sickness, bad weather, etc, for the rest of the year Comparable figures for "usually employed" women in rural labour households/had been 184 days and 116 days respectively. Bulk of the occupations (64 to 70 per cent), for the above groups of women, came from wage employment in agricultural activities, while about a fifth was from self-employment. The average daily earnings of female workers were 40 per cent less than those received by male workers. Female workers neither get benefitted by the Minimum Wages Act, nor by the Equal Remunerations Act. They are in general unware of the provisions of these Acts, and are mostly exploited in the absence of proper implementing authorities. In the prevailing situation, these women would have to be made conscious about their legal rights.

Recent studies have brought out a very close relationship between the income and status of women and their fertility rates. Birth-rates are significantly lower for women with sources of income. Correlation between the age at marriage and the birth-rate is also very high. Highly significant relationship has also been noted between education of women and the number of children they produce. Illiterate village women always prefer to have a big family, compared to their better informed sisters. The NSS had estimated that the average number of children born per woman was 6.0 if she had no school education while it was only 2.0, if she was intermediate and above. Population growth rates depend very highly on the age at which village women get married, and inspite of the legal provision for preventing child marriages, (Child Marriage Restraint Act), it is still a very common practice in the rural areas. Serious legal lacuna,

social inhibitions and biases stand in the way of properly implementing the Act. Social education of women, specially among the groups with high fertility rates are in vogue, organised mainly by voluntary agencies, but there is yet a long way to go before any fruitful impact can be made. Local organisations like Panchayats, etc only can take up work of arranging systematic education, guidance and effective implementation of the provisions of the law. This would put a check to the multiple increase in our population, which nullifies the growth and development so far achieved. The Department of Rural Development of the Ministry of Agriculture has been collecting and processing useful statistics on various rural programme including Women's and Tribal Development Programme. This Department can take up the necessary follow-up studies, in collaboration with the National Sample Survey Organisation, which has been successfully conducting large-scale household and establishment surveys since 1950.

Our five-year Plans envsiage that the main thrust of development for women should be provided by the general sections of development, and that their employment schemes, public consumption programme (specially their minimum needs), would be looked after by specially drawn up plans. Statistical system needs some re-orientation, so that we can not only identify women who are gainfully employed and assess their contribution in the production and distribution system prevailing in the economy, but may also have detailed information on their levels of living, consumption and saving habits, indebtedness, asset holdings etc. However, mere collection of information will not be enough. The data thus collected will have to be suitably analysed to help understanding the basic realities regarding their share and contribution in the development process and in the various components of social consumption, etc.

This would involve in close coordination between government and voluntary agencies, specially the institutions situated in the rural areas and who are acquainted with the local habits and traditions, and are expected to invite least resistance from the respondents. The current plan of initiating data collection by Panchayats, block-development authorities, etc. however would have to be supplemented by detailed national surveys conducted by the Centre, so that comparable statistics are available for planners and policy makers. ☐

Jute Corporation Of India Marches Ahead

Tarit Kumar Datta
Research Scholar
Economics Department, Jadavpur University

THE JUTE Corporation of India, the single largest purchaser of raw jute in the country, was established with a view to save the four crore jute-growers from century old exploitation of the traders. It is "a centralised agency" which "with its judicious purchasing should be able to ensure for the growers a better price by a process of elimination of the many-tiers of the intermediaries operating in the jute market. This will be a long term objective of the corporation. In this endeavour the corporation will make arrangement to buy jute directly from the jute growers and build up its direct relations with them". The objective was further supplemented in 1972, and it was stated, "it has been decided that the price-support operation ensure against decline in jute prices below the levels of minimum price will be surely the responsibility of the Jute Corporation of India from the current season and onwards". Thus, the twin socio-economic objective of the J.C.I. is on the one hand to make the growers free from exploitation which may be regarded as the social objective while to make attempts to establish the raw jute in the market may be regarded as the economic objective.

In order to purchase raw jute from the growers at reasonable price, the corporation planned to open a well-knit net work of Departmental Purchase Centre (DPC) all over the jute growing area. Presently, the corporation is pyramidal in structure with 133 DPC and SC, in the bottom phase spreading over West Bengal, Assam, Bihar, Orissa, Tripura, Andhra Pradesh and Uttar Pradesh while 15 Regional Offices in the middle phase and the head office at the apex.

The main function of the DPC is to purchase raw jute mainly from the growers and village-based farias. These centres are usually located at the secondary markets where certain infrastructural facilities are available, such as assorting, baling, storage, transportation and banking etc.

The Reserve Bank of India finances the Corporation for its procurement operations every year at 15 per cent interest rate. The whole purchase operation of the Corporation may be divided into two types—(a) Price support purchase operation and (b) Commercial purchase operation.

Whenever the ruling market price comes down the statutory Minimum price level or below it, entire purchase operation of the corporation is m… at the minimum price. This is known as supp… price operation. Whenever the ruling market pric… higher than the statutory minimum level, the purch… operations are done at prices higher than the statu… minimum level, the purchase operations are done… prices higher than the support price, as advised fr… time to time. This commercial purchase operati… is done mainly at the DPC premises as per instru… tions issued from time to time. But in North Beng… Assam etc. where 'Hat' system is prevalent, the pu… chase is also done at the hats by J.C.I.

Purchases are made on "Garsat' i.e. average bas… While purchasing, the purchasers very carefully es… mate the grade of raw jute on the basis of I.S.I. sta… dard considering the following points (i) strength a… length of fibre, (ii) Root content, (iii) Colour a… lustre, (iv) Fineness, (v) Density (vi) Moisture, a… (vii) Foreign material embodied in the raw jute. Pr… sence of moisture does not affect the grade, but caus… weightloss of the fibre in later stage.

The performance of the Corporation since its inc… ption shows a mixed tendency. The following tab… reveals the purchases of the Corporation.

TABLE—I
Year-wise Purchase of Raw Jute

Year	Procurement target (in lakh bales)	Quantity purchased in lakh bales	Percenta… of to… arri…
1971–72	..	0.04	.
1972–73	4.00	0.89	.
1973–74	10.00	7.25	9.(
1974–75	15.00	5.61	7.(
1975–76	..	5.81	8.(
1976–77	..	8.15	10.(
1977–78	12.00	0.67	1.(
1978–79	10.00	8.31	11.(

In 1977-78, the Corporation's procurement slum… ed tremendously owing to the fact that the ruling ma… ket price, was much higher than the Corporation's a… vised rate due to low production of the crop.

It has been held that the Corporation's purcha… operations would have been much better provid… there had been a quick 'relay' system of communic… tion between the decision makers and the impleme… ters. In the existing system, after much delay wh… the decision finally reaches the DPC, the market situ… tion changes due to fluctuating nature of the mark…



Jute fibre hung to dry

Hence, the DPC has to wait in the new market situation for next instruction. Thus 'time-lag' has been a serious obstacle in achieving the desirous result in the purchase front. Once this process is simplified, there will be substantial rise in the Corporation's purchase operations. But the corporation plays a very important role in time of crisis. For instance, during the period of last year's severe flood in West Bengal, when the raw jute price was falling sharply, private traders were purchasing relatively smaller quantities. But when the raw jute market was going to be stagnant, the corporation along with cooperative societies checked the fall of price by making purchases vigorously at higher commercial price.

Thus in October, 1978 when the private traders increased their purchase by only 35.77 per cent over September purchase, the Corporation along with cooperative societies increased the purchase by 162.5 per cent. Hence, by offering higher price and purchasing larger quantities the corporation was able to check the declining tendency of the ruling market price and thus gained the faith of the growers. This may be regarded as the unique success of the corporation.

However, in normal times the private traders always compete the corporation for purchasing raw jute in the market. As a result, the traders' sometimes pay the growers a higher price than the price offered by the corporation. Thus the presence of the J.C.I. in the market helps the growers to fetch higher price from the traders. This may be regarded as an indirect benefit from JCI which accrues to the growers.

The overall performance of the corporation could be improved if certain measures are taken :—

(1) Opening of DPC with village level 'purchase shop' in the primary markets and remote hamlets in order to establish direct link with the growers ;

(2) To introduce an easy and convenient method of communication (direct-relay system) between the Head Office, Regional office and DPC ;

(3) To replace the present rigid system of price fixation by a flexible one ;

(4) The purchase centres should remain open all over the year to enable the salers to sell their produce without any difficulty, both in peak and lean periods ;

(5) The procurement cum operational cost should be reduced by increasing the procurement quantity while the purchasing price (advised) for higher grade of jute should be raised ;

(6) In order to make full-fledged commercial operation the present restriction of the RBI on commercial purchase should be relaxed ;

(7) The present complex system of grading based on ISI standard consisting of eight classes, which very often leads the growers as well as the purchasers to mis-understanding, which should be replaced by an easy system with four or five classes. ☐

Role of Handicrafts in Indian Economy

Alak R. Chaudhuri.
Incharge, All India Handicrafts Board, Gauripur

HANDICRAFTS add aesthetic value to the Indian life, play a signifficant role in the Indian economy in general and in the life of artisans in partcular. The total value of output of handicrafts is estimated to have reached a figure of about Rs. 950 crore by 1978-79 employing approximately 19 lakh people. The target set by the end of the 6th plan (1982-83) is of the order of Rs. 1500 crore registering an annual growth rate of over 30 per cent during the next few years.

Handicrafts sector has the highest employment potential in relation to capital employed, and it generates income in the hands of weaker sections of the society to improve their standard of living. These industries also can provide subsidiary employment and income to the agricultural workers, during off season. As this industry is totally based on local resources, raw materials and manpower, it automatically improves the economic position of regions. Handicraft industries have a high "Frution Coefficient" (Rates between output and investment) and short "Frution Lag" (Low gestation period) for raising living standards of the artisans. It has been estimated by the 6th plan working group on Handicrafts that this sector will provide additional employment opportunities for more than seven lakh persons during 1978—83 period. Table 1 below gives the craft-wise estimation of additional employment.

Exports

Indian handicrafts have been renowned in the world market from time immemorial. The increasing popularity is reflected in the big jump in their export earning from a bare Rs. 19 crore in 1960-61 to Rs. 755.69 crore in 1977-78. The year 1977-78 set a new record by exceeding the target of Rs. 195 crore (other than gem & jewellery). It registered an increase from Rs. 169.82 crore during 1976-77 to Rs. 199 87 crore during 1977-78 and gem & jewellery from Rs 247.28 crore to Rs. 558.82 crore during 1976-77 to 1977-78. Since handicrafts consist of large number of items they have been broadly classified under the two major groups namely (i) Handicrafts other than Gem & Jewellery and (ii) Gem and Jewellery Table 2 gives the composition and movement of exports of handicrafts according to two majo rgroups.

Exports of "Handicrafts other than Gem & Jewellery" can be divided into 11 groups and "Gem & jewellery" four groups. Woollen carpets accounted for the major share of 'Handicrafts other than Gem & Jewellery' ranging from 28.91 per cent to 41.01 per cent during 1969-70 to 1977-78. The share of artmetalware ranged from 13.50 per cent to 18.56 per cent while the share of Handprinted textiles has reduced from 27.55 per cent to 10.81 per cent though it has been compensated by a substantial increase in the export of embroidered textiles from Rs. 6 19 crore to Rs. 46 9 crore during 1969-70 to 1977-78.

Table 1

Crafts	Estimated additional employment (in lakh)
1. Carpets & druggets etc.	3 00
2. Gem & Jewellery	1.00
3. Hand Printing/Painting	1 00
4. Cane & bamboo and willow Products	0.50
5. Toys, Dolls & Hand Knitting	0 50
6. Art metal wares	0 40
7. Wood Wares	0 40
8. Other Crafts	0 25
Total	7 05

The share of Zari also has gone down from 3.10 per cent to 1.37 per cent during the same period. This is mainly due to the withdrawal of cash assistance on export of real Zari. The lower value of exports of ivory items is due to the preservation of wild life.

The share of 'Miscellaneous Handicrafts' has been around from 10.28 per cent to 15.76 per cent during 1969-70 to 1977-78. Among 'Miscellaneous Handicrafts' important items are Agarbatties, leather goods, other works of art, papier mache; postal packages, Hukahas of basemetal, paintings, stuffed animals, trophies etc. Exports of Agarbattis rose from Rs. 29.4 crore to Rs. 61.14 crore during 1975-76 to 1977-78. Similarly, 'Pottery' and 'other works of art' also rose from Rs. 2.3 crore to Rs. 37.4 crore and Rs. 19.9 crore to Rs. 69.9 crore during 1975-76 to 1977-78 respectively. 'Papier mache', Hukahas of basemetal and 'stuffed animals' also showed distinct rise. An analysis of 'Gem & Jewellery' group indicates that the share of 'Precious semi-precious and synthetic stones' has been ranging from 97.23 per cent to 98.21 per cent duing 1969-70 to 1977-78. The 'Gold Jewellery' ranging from 0.90 per cent to 1.21 per cent. The share of 'Gem & Jewellery Group' has been around 51.44 per cent to 73.55 per cent of total handicrafts export during the year 1969-70 to 1977-78.

nearly 90 countries. But it makes no impression on the foreign markets of handicrafts which are now being steadily filled by crafts from other countries of the world. At present nearly 73.55 per cent of the total exports of handicrafts comprises of Gem & Jewellery. India has a vast variety of handicrafts, most attractive to the foreigner which could secure large sales abroad. But our export items must be reoriented to the international demands and standards.

Handicrafts items are generally patronised by those who change their taste of fashions and designs quickly. Human element is also some times a limiting factor in increasing the quality items of handicrafts at a very fast rate. The overall picture for exports is overshadowed by the great drawback of a steady flow of production. Therefore, with a cautious approach and also keeping in view the trend in the past few years, it would be reasonable to expect that the exports of handicrafts may increase by about 30 per cent during the remaining years of Sixth plan period.

New Strategy

In the light of overall objectives of econnmic planning set in the draft plan for the VI five year plan, the principal objectives of Working Groups on Handicrafts have been optimised as under :—

(i) Making handicrafts an effective instrument for generating employment so as to reduce unemployment and under employment.

(ii) Making handicrafts an effective instrument for removal of poverty by increasing the incomes and purchasing power of artisans engaged on full time and part time basis;

(ii) Improving craftsmanship and rural household innovativeness while retaining the foundation of the cultural heritage; and

(iv) promotion of economic independence and social status and individual dignity of craftsman.

Thus the development of Handicrafts industry square is well with the progressive development of our economy in social, political and economic terms. □

Table-2

(Rs. in Crore)

Year	Handicrafts other than Gem & Jewellery	Percentage share	Gem & Jewellery	Percentage share	Total
1970-71 . . .	37.54	46.75	42.76	53.25	80.30
1971-72 . . .	38.23	42.23	52.27	57.77	90.52
1972-73 . . .	51.80	39.66	78.82	60.34	130.62
1973-74 . . .	72.58	40.15	108.20	59.85	180.78
1974-75 . . .	92.38	47.52	102.01	52.48	194.39
1975-76 . . .	109.56	46.74	124.82	53.26	234.38
1976-77 . . .	169.82	40.71	24/.28	59.29	417.10
1977-78	199.87	26.45	555.82	73.55	755.69
1978-79 . . .	204.17	21.49	745.83	78.51	950.00
	(Provisional)		(Provisional)		(Provisional)

Out of total exports of handicrafts during 1976-77 European countries accounted for about 42.22 per cent, American countries for 25.96 per cent and Asian, African and other countries accounted for the remaining 31.82 per cent.

But except for 'precious, semi precious, synthetic stones' and 'Woollen Carpets', India has hardly stepped into important foreign markets in a big way. However, this also indicates that foreign markets are very large and they provide tremendous opportunities for export of Indian handicrafts. Our handicrafts go to

Exporting Garments

—Some Constraints

R. B. L. Garg
Lecturer, M. S. J. College, Bharatpur

INDIA is the original home of cotton which, it is said, was spun during pre-historic times. Indian fabrics were greatly admired even in the Roman world. The Indian handloom product especially the celebrated 'muslin' adorned the proudest beauties of Rome and Greece. The dazzling silk of the south, the finest of the fine fabric-the-muslin of Dacca and the brilliant brocades of Banaras—all these had cast a magical spell on the fashion conscious Europe of yore when India for them seemed to be the land of ever lasting wonder.

Garment-making however, is a new industry and much newer is the entry of our garments in the overseas markets. Our old textile crafts have been responsible for promoting export trade. The colour concept and the designing capabilities of our master craftsmen have lent a new meaning to the development of fashion garments. During the short period of its development, Indian garments with their aesthetically pleasing embroidered and printed motifs have penetrated into the fashion world and have made a mark in the overseas market. The western markets inundated with synthetic fibres and machine-made goods find something new in the colourful readymade apparels which are natural to wear. There is little doubt that it can become a major foreign exchange earner closely competing in weightage with the engineering and sugar industries, if adequate attention is given to the development of the tremendous potential available in this sector. There are about 3500 garment-making units of which 3000 are the exporters. The domestic trade is not very encouraging mainly because readymade garments are popular only in the cities, while in rural areas the conventional tailor still dominates.

Export Performance

Ready-made garments made their first debut in the fashion world barely a decade ago. During this short span of export trade we have made rapid strides—from Rs. 8 crore in 1970 to Rs. 305 crore in 1978. The export during the first quarter of the current calendar year has already crossed Rs. 150 crore. It should, therefore, cause no surprise if the industry exceeds the export target of Rs. 400 crore fixed by the Union Ministry of Commerce for the current year.

Various types of garments produced from cotton contribute a very high proportion of the total exports. Remarkably 85 per cent of our garments export constitute those made from handloom fabrics. We are also exporting rayon, woolen and silk garments. Many young entrepreneurs are in the business and French and American designers are collaborating with Indian counterparts to boost exports. Our major markets for garments are the USA, the EEC countries (Particularly before the imposition of quota restrictions), Federal Republic of Germany, Canada, France, the USSR, and Spain. The major items of exports are shirts, T-shirts, trousers, blouses, dresses for girls, under-garments and sport shirts, work-shirts, silk and synthetic outer garments, unisex shirts, leisure wear apparel and others.

Constraints

Because of our follies and faults and partly due to lack of spirit of helping the developing countries on the part of the USA and the EEC countries the orders from these countries have not been encouraging. There are many explanations furnished for the curbs on our

exports, namely, high cost of production of their own units (protectionist policy) rendering them in capable of competing with Asian garments, rising mal-practices of the Indian exporters and non-competitive prices of our garments. There may be some amount of truth in these explanations. As certain inexperienced exporters 'jumped into fray' the quality standard of our exports has not been fully maintained. Besides there have been certain factors inhibiting our exports, such as, mushroom growth of smaller units, our inability to meet the requirements of ever changing trends in fashion, inefficiency of our exporters to keep up the time-schedule of shipments (due to non-abailability of fabrics in time, lack of cargo space etc.) and financial difficulties of our exporters. Lack of diversification is responsible for some kind of resistance on the part of importers who are averse to dumping the market with same types of goods. Market surveys have revealed that in styles, designs, finish, packing and the like, Indian garments leave much to be desired.

Diversification

There is no doubt that our exports of garments have gone up considerably—the rate which has not been equalled by any other country in the line However, our share in the world trade of garments is quite insignificant (not more than 2 per cent), although India ranks high among textile producing countries, it possesses vast potentialities particularly in cost advantages of labour and raw material. Further, as pointed out by the Union Minister of State for Commerce, Civil supplies and Cooperation Mr. Arif Baig at the inauguration of annual General meeting of the Clothing Manufacturers' Association of India held recently, Indian exporters as a class have been relying on just a few repetitive categories and designs and they are exporting garments for casual wear. They do not seem to have made any inroads into the exports of staple items of business such as night wear, industrial clothing, institutional wear, dresses. Moreover, the other countries like Hongkong, Taiwan and South Korea have certain advantages over us. We differ from them not only in their socio-economic set up but also in production patterns in this industry and its allied fields. While the lifeblood of their economies is the export of labour intensive products like garments, India has for long treated the export of these items more as an outlet for the surplus of cotton textiles produced.

Looking at the nature of the problem, the garment industry has not only to face the challenge of developing new designs and styles which are 'truly Indian' but also make inroads into fields such as nightwear, industrial clothing, institutional wear and dresses. But as the competition in markets abroad is fierce, the performance on the export front through diversification will depend on whether it will be able to persuade the mill industry and the Government to give it adequate assistance. It is heartening to know that the Government has appreciated the rationale behind the industry's plea for arranging adequate imports of heavy cloth under customs bond for use in garments for exports.

An earnest endeavour ought to be made territory-wise to diversify exports. The garment exporters in the country will do well to tap the growing markets of such countries as Japan, Australia and Canada. These countries which have not imposed any quota restrictions, are resorting to imports to get over the problem of rising labour charges. Japan, which imports worth two billion dollars annually, can be a good prospective buyer. Shirts, suits and dresses made of man-made fabrics have great scope in Japanese markets. Sleek and ultra-fashion garments exported to Japan two years back were a big draw in super markets. Potential items like ladies garments, children's wear and men's apparels are in good demand. It is necessary to seize the opportunity especially when the unit value realisation is on the increase. Our garments, however, need to be stitched according to Japanese sizes in terms of their stature broad shoulder and length of arms.

Quality Control

Quality control should never be a casuality when we deal with the most sophisticated markets in the world. There is not doubt that a good number of exporters take scrupulous care. But certain inexperienced ones are unable to maintain the required quality standard. While the Export Inspection Act has been made more stringent to ensure good quality of products, it is the moral obligation of exporters not to make a comprimise on quality.

A reorientaion of the export policy can enable India with abundance of relatively cheap man-power to achieve a quicker rate of growth in the export of garments. The structure of garment industry needs dynamic changes and the pecularities of our foreign markets need to be properly gauged. The present state of affairs calls for vigorous efforts on the part of exporters, fabricators and the Government particularly when the markets like the US and EEC are being closed to Indian garments. In order to survive in the foreign market it is not only necessary to know our strength but also rightly assess the strength of our competitors and identify market opportunities. □

Public Investment Decisions

Public Sector Investment Planning for Developing Countries *by E. V. K. FitzGerald, Macmillan, Delhi,* 1978. *Pages* 200; *Price Rs.* 50.

FITZGERALD is one of those development economists who have worked in some developing countries like Peru, Pakistan, Kenya etc. He thus has sympathetic understanding of the problems of emerging nations. His knowledge is empirical and not bookish. This makes a perusal of the book worthwhile.

The book is essentially an intermediate teaching text in the analysis of public investment decisions for developing countries. It provides practical explanation and illustration of the more advanced techniques of social cost-benefit analysis and investment programming that has been developed recently. This work is developed through seminar 'workshops' which is a common style of Chicago school economists. The reviewer feels, however, that the present work is not fully edited to become a reference reading for the wider public, outside the post-graduate students.

The book is written in two parts. Part I deals with the analysis of public sector investment projects and covers aspects like project appraisal, the investment criterion, secondary costs and benefits, the economic valuation of commodities, costing the factors of production and the distribution of costs and benefits. Part II covers investment by the state, sectoral planning, optimal investment models and public investment and economic strategy. Part III provides supplementary material necessary for students and includes 'assignments' of numerical problems and essay topics. Bibliography is very useful but again it is a hotch potch of development economist's reference books and those on public investment criteria. The book carries an 'Index' which is more carefully done. The author is conscious that this makes somewhat 'heterogeneous presentation' but, according to him, the objective is utility to the student and planner rather than academic elegance.

There are four distinct categories of state investm viz. (i) public infrastructure projects such as ro water supplies ; (ii) public enterprise projects e.g. s mills, power plants ; (iii) public credit for priv sector projects (small industry, small farms) and private sector projects subject to public control transport, mining activities etc. FitzGerald rightly cognises the inclusion of the criteria of income redis bution and autonomous industrialisation in 'cost ben analysis'. His advice to planners is that projects sho not be considered in isolation but be viewed as par an overall sectoral programme, for, the importance (a valuation) of the project depends upon its place ir sectoral development programme. Hence the rec emphasis on 'micro level planning'. Some may consi social factors as constraints in public investment. recent years, there has emerged new emphasis investment effects on environment and polluti control. It is worthwhile to note that the pubilc sec formed, in early nineteen seventies, as much as 87 p cent of Gross Fixed Capital Formulation in Banglade 52 per cent in Brazil and around 43 per cent in Ind Nigeria and Peru. It was as low as 38 per cent Kenya.

"Investment means the commitment of resources the formation of capital assets, which in turn allow stream of new resources to be generated in the futur There are three central aspects of investment analy viz. (i) the forecasting of these flows over the life the project ; (ii) their valuation and (iii) their red tion to 'present value'. It follows that the value of capital asset depends upon the use to which it is to put and the development of the rest of the econo over its life. Costs and benefits include effects outs those of the enterprise or project itself. The definit and estimation of the external costs and benefits of investment are central to the concept of 'economic' 'social' project appraisal as opposed to a purely 'fin cial' or 'private one'. FitzGerald discusses the econo valuation of commodities in respect of both 'trac and 'non-traded' (i.e. not normally traded in nationally such as electricity or transport services)

For those connected with Indian planning it is i to read FitzGerald. He discusses decentrali planning of public investment. It will be useful class rooms as well as to any planning organisation

S.M. Sha

Sericulture Changes Face of A Bidar Village

GADAVANTI is a small sleepy village in Humnabad block of Bidar district in Karnataka. Like many other villages in the district, this village has depended on Agriculture all these years for its livelihood. In fact, the villagers knew nothing of other occupations except agriculture.

An enlightened youth leader of the village, Shri Siddanna Bushetty, aged 23 years has studied upto X standard. He is the President of Shri Sangameshwar Youth Club. After knowing the money spinning potentialities of Sericulture, Shri Bushetty took to sericulture in December, 1978 and started growing mulberry in a two-acre plot. For this purpose, he attended training in Sericulture at far away Channapatna in Bangalore district. Equipped with the necessary expertise, he returned to the village in January, 1979 and in the following month, introduced sericulture for the first time in his village. Shri Bushetty reared 100 silk worms and in one month they yielded him 60 kgs. of silk, the highest yield in Bidar District

The newly introduced occupation has fetched him a profit Rs. 1000|- in a single crop Encouraged by this experiment, six more persons in Gadavanti village have taken to sericulture

Today the entire village is poised for a major breakthrough in sericulture, thus evolutionising its economy.

G. D. Patil,
FPO, Gulbarga.

Processing Vegetable Oil Seeds

(*Contd. From Page* 12)

The oil extracted by expellers contain a large amount of foots, fines, or solid material which escape through the opening between the cage bars. The oil is usually given a final filteration in a filter-press to remove small particles of foreign matter which are not recovered by screening. The removal of this material is highly necessary as it is responsible for high losses in refining process. The cakes leaving the expellers are passed through cake-breakers and then subjected to flaking in big mills. The flaked material is then conveyed to the solvent extraction plant where almost all the oil contained in the cake is recovered.

If a high oil content seed is cooked, broken and partially flaked and then subjected to solvent extraction type, its oil content drops to 10—12 per cent.

In this system the seed is solvent-extracted at a low temprature (max 70°C) (N-hexane is the only solvent commonly used in India for extraction of oil and fats) while prepressing process, the seed attains in the expeller a temperature of 180°C. The colour of the oil extracted by this process is better and the oil is of highly nutritive value.

The oil obtained by solvent extraction system was not permitted for edible purposes even after processing till 1967. Realising the vast potentiality of such oils and their acceptance in many overseas countries, the Indian Standards Institution (ISI) took the lead and formulated specification for such solvent extracted oil which played an important role in obtaining due recognition to the solvent extracted oil, thereby enabling this industry to grow. □

Licensed U(D)-52 to post without pre-payment at Civil Lines post Office, De

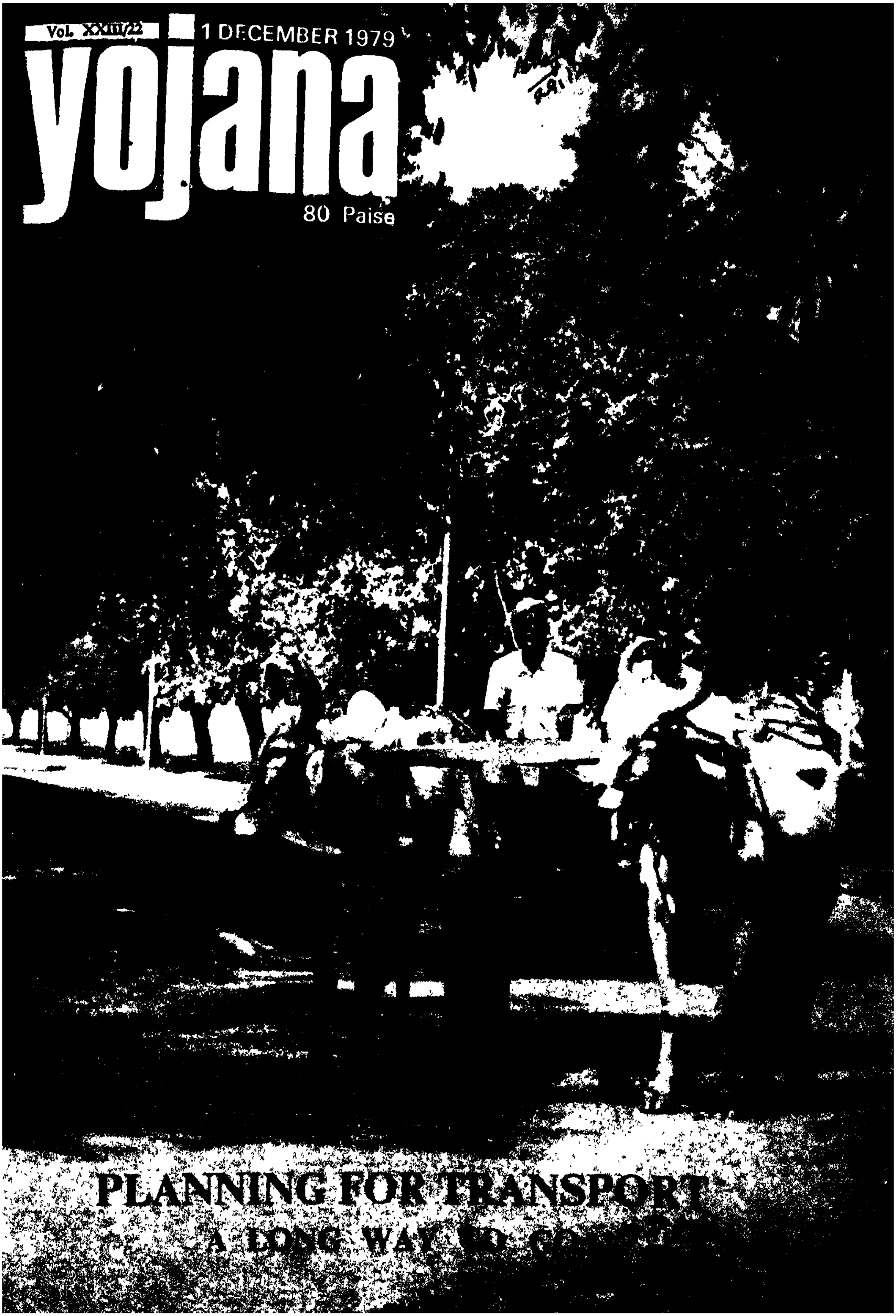
ecc
men
careful
somewha
to him, th
ner rather th

Govt. of India Press, Ring Road, New Delhi-110064 and
, Publications Division, Patiala House, New Delhi-110001

Vol. XXIII/22 1 DECEMBER 1979

yojana

80 Paise



OUR ACHIEVEMENTS

Exports to Japan up

INDIA'S exports to Japan, during the first four months of the current financial year, have shot up by 32 per cent. This is in comparison to the corresponding period last year when the exports totalled 285 million dollars. Against it, the earnings in 1979 are placed at 377 million dollars.

Some of the major products, the export of which has risen substantially, are semi-finished and finished leather and leather products, basic chemicals, pharmaceuticals, cosmetics, handicrafts, jute manufactures, handknitted carpets, raw cotton, garments, ore concentrates, and marine products.

In the case of semi-finished and finished leather products the uptrend in exports is as high as 112 per cent. This year the exports of leather and leather products were placed at 11,742.000 dollers against 5,516,000 dollars in the corresponding period last year. In the case of hand-knitted carpets the increase was 66,000 dollars against 5,000 dollars during the same period last year.

Similarly, the increase in the exports of other products is : basic chemicals, pharmaceuticals, cosmetics: 26 per cent (2106,000 dollars against 1671,000 dollars); handicrafts 12 per cent (476,000 dollars against 425,000 dollars); jute manufactures 10 per cent (7159,000 dollars against 5984,000 dollars); manufactured tobacco 16.5 per cent (3261,000 dollars against 2800,000 dollars); garments 86 per cent (1,7295,000 dollars against 9290,000 dollars) iron ore and concentrates 25.9 per cent (10,7989,000 dollars against 8,7511,000 dollars).

A 40 per cent improvement in the export performance has been reported by public enterprises under the department of heavy industry during April-July this year.

With export orders they executed, valued at Rs 71.17 crore, compared to Rs. 51.04 crore during the corresponding period last year, the performance of the public enterprises was 'particularly satisfactory' when contrasted with the seven per cent decline in the overall exports of engineering goods during the first quarter of 1979-80.

At the end of July, the public undertakings had export orders in hand worth Rs. 923.83 crore (90 per cent of them accounted for by EPI and BHEL), making a 20 per cent increase over the figure for July 1978.

The undertakings won export orders worth Rs. 8.08 crore during July this year. Of this, Ranchi-based Heavy Engineering Corporation Limited, secured an order for the supply of 50 nos. slag cups to Egyptian Iron and Steel Company, Cairo, and for the supply of coke-oven items, steel forgings, castings, steel plant equipment etc. to Prommash export of USSR for a total value of Rs. 7.11 crore. □

STC Bags Export Orders

STATE Trading Corporation (STC), had won on the spot orders for Rs. 50 lakh to export Indian manufactured leather goods. The orders were booked at the Paris Leather Fair in which India participated. Though leather goods like shoes, bags and Kolhapuri chappals were included in the export orders, the last item was very much in demand and several thousand pairs of these chappals had been indented □

India Bags Project in Iraq

INDIA has secured the twelfth project in Iraq in the current year with the award of the West Bank's trunk sewer in the Baghdad city. This project is valued at Rs. 12 crore.

Recently another Indian construction firm, the Hindustan Construction Company Private Limited, was awarded the contract for building the Daqooq Chai bridge, valued at Rs. 6 crore. With the award of these two contracts the value of projects secured by India in 1979 up till now stands at Rs. 163.5 crore.

Record Rise in Zinc Lead Production

PRODUCTION of zinc and lead showed record increase last year with output of zinc going up 50 per cent to 64,281 tonnes during 1978-79 and output of lead to 10,475 tonnes, representing an increase of 38.87 per cent.

To achieve self-sufficiency in lead and zinc and progressively reduce imports, a series of decisions were taken last year to expand capacity through the development of new mines and to create more smelting capacity to match ore production.

Among the steps taken to increase production was the clearance given in January, 1979 to two new mines involving total outlay of Rs. 14.03 crore. This includes the development of the new lead mine at Sargipalli in Orissa at a cost of Rs. 11.88 crore, which will produce 500 tonnes of lead ore a day yielding 6,400 tonnes of lead metal a year. The other is the lead-zinc mine at Brol in Rajasthan to be explored at a cost of Rs. 2.15 crore. The Agnigundala lead mine in Andhra Pradesh was transferred from the Hindustan Copper Limited (HCL) to the Hindustan Zinc in October, 1978

To treat this additional ore production, the lead smelter at Tundeo in Bihar will be expanded from its current annual capacity of 8,000 tonnes to 10,000 tonnes and that of the Vizag lead smelter from 10,000 tonnes to 20,000 tonnes per annum.

The significance of the steps taken is seen in the context of the wide-ranging applications of these two metals in industry—from galvanising, dry cell batteries die casting, manufacture of rubber, pigments ceramics to pharmaceuticals and fertilisers in the case of zinc and in lead, its use in storage batteries, plumbing pipes cable sheathing, additives for petrol, alloys and radiation shield. □

YOJANA

Volume XXIII Number 22

1 December 1979

10 Agrahayana 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address**: Yojana, New Delhi. **Telephones**: 383655, 387910 385481 (extensions 402 and 373) **Circulation**: Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription: Annual —Rs. 18. Two Years—Rs. 30 Three Years—Rs.42. Foreign Subscription : One Years — £ 2.70 or $5.50 Two Years—£ 4.50 or $9.00 Three Years—£6.30 or $ 12.50 Single Copy—£0.12 or $ 0.25

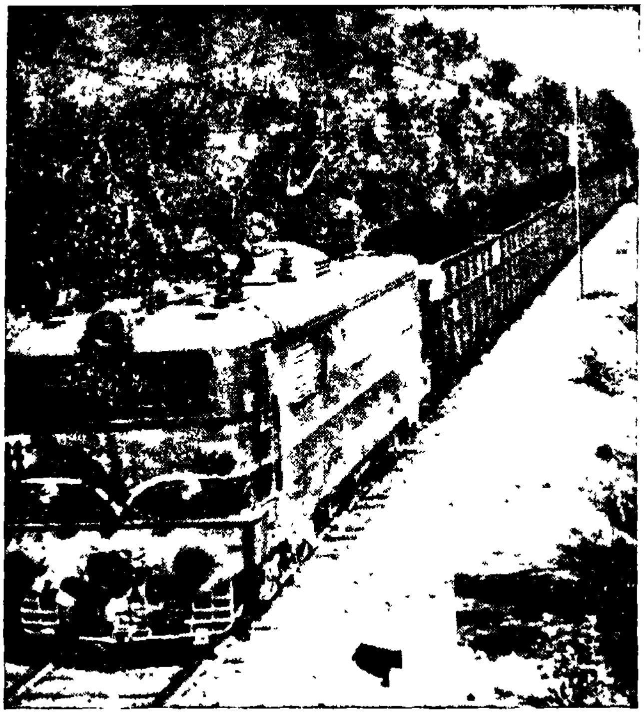
Editorial

Public Service Delivery System for the Rural Poor

DESPITE the best intention of the planners and administrators to improve the lot of the poor majority who live in rural areas, the decades of planned national development have not changed the grim style of their living. The benefits of the Green and White Revolutions continue to be beyond their reach. Even the programmes specifically designed to help the small and marginal farmers, agricultural labourers, rural artisans and other select group of the rural poor have failed inspite of a vast network of public service delivery system in such fields as banking, extension services, education and health to cater for their needs.

The recent session of the working party on improving the public service delivery system for the rural poor convened by the Govt. of India in collaboration with the United Nations Escap has brought into sharp focus the flaws in the delivery system. The report of the Working Party would be read with interest as a document of great relevance to the country as well as to other developing countries in the Asian and Pacific region. The problem is stupendous. It varies from region to region and there cannot be a panacea for so many evils in a situation which is continuously changing. The public delivery system unless linked up with increased productivity of the people for whose economic betterment the schemes have been devised will be self-defeating in the long run. While attention has to be given to productivity, keeping in view the social milieu of the beneficiaries, the poor must receive the goods and services earmarked for them. These must not be allowed to be asurped by those who are economically better off and have the capacity to grab the benefits mid-way.

The fact is undeniable that it is not easy to reach the poor. Even when the Government provides goods and services, the rural poor may not turn up to carry the packets home. The reasons could be many. Probably they expect them to be delivered by a single agency or under one roof to avoid the avoidable trouble of running about. The concept of "village sachivalaya" for package delivery from a single point deserves a fair trial, provided it does not degenerate into a spending spree to the glee of the building contractors. The poor villagers have a grouse about the procedural complexities which are very often beyond their comprehension. Simplification of procedure to cut down procedural delays is clearly needed. At the same time the poor can help themselves by organising in the same way as the organised labourers have done. Such unionisation of the rural poor is a clear necessity if the public delivery system is to show better results. The rural labourers can always combine on the issue of the statutory minimum wages to be paid to them. They will have to serve as watch dogs to prevent the unauthorised absenteeism of the single-teacher primary school in the villages. They should see that the irrigation pumps work properly and do not remain idle for lack of repair . The revised minimum needs programme cannot be implemented without the cooperation of the people who are deprived of the bare necessities. The need to be convinced that they must give up their old ways and take to safe water supplied to them through the public delivery system. Adoption of new medi-care provided to them is in their interest. Improvement in the delivery system for the rural poor is not merely a problem for the administrators. The social scientists, economists and planners should be equally involved and drawn into the arena to ensure improvement. □



Railway Network in India

T. A. Pai

In the 32 years of Independence our Railways, the nation's largest government undertaking, have substantially acquired high expertise and technological skill in all fields. The age old steam locomotives are gradually being replaced by diesel and electric ones.

Indian Railways extending over 60,693 route kms, have a fleet of over 11,000 locomotives, 34,800 coaching vehicles and 4,00 000 goods wagons. Annually they carry about 240 million tonnes of freight traffic and more than 3700 million of passenger traffic.

Highlighting other achievements of the Railways, the author pinpoints the plans of complete modernisation of the system which would provide more efficiency, increased safety and comforts of the travel.

THE INDIAN Railways are the Nation's largest undertaking with total assets of about Rs. 5,900 crore and a staff strength of approximately 17 lakh. The annual revenue is of the order of Rs. 2200 crore. Our Railway system is Asia's largest and the world's fourth largest in terms of route kilometres and is the second largest in the world under a single management.

Railways are even now the main artery of India's inland transport and carry about two-third freight and about half of the passenger traffic in the country. About 11,000 trains are run every day on an average, for a total distance of 13 lakh kilometres. The trains carry approximately seven lakh tonnes of freight and one crore passengers on an average daily.

The Indian Railway system extends over 60,693 route Kms. of which about 12,250 Kms. have double or multiple tracks and about 4700 Kms. are electi fied. The system is split almost equally between tw track gauges, viz. broad gauge and metre gauge, wi a small portion in two norrow gauges. Although bo the broad and metre gauge networks extend to mo parts of the country, about 80 per cent of the traff is carried on the broad gauge and the metre gauge ac mainly as a feeder.

With a modest start on April 16, 1853 when tl first train ran between Bori Bunder and Thana i Western India, a distance of 35 Kms., the system ha grown into its present mammoth size over the yea after passing through many vicissitudes. During the la 32 years of Independence, in particular, they hav acquired substantial expertise and technological ski in all fields of construction and operation.

At the time of Independence, Indian Railways wer mostly dependent on imports. The massive programm of rehabilitation, modernisation and development under taken during the last three decades, has enabled th

T.A. Pai is the Union Minister of Railways

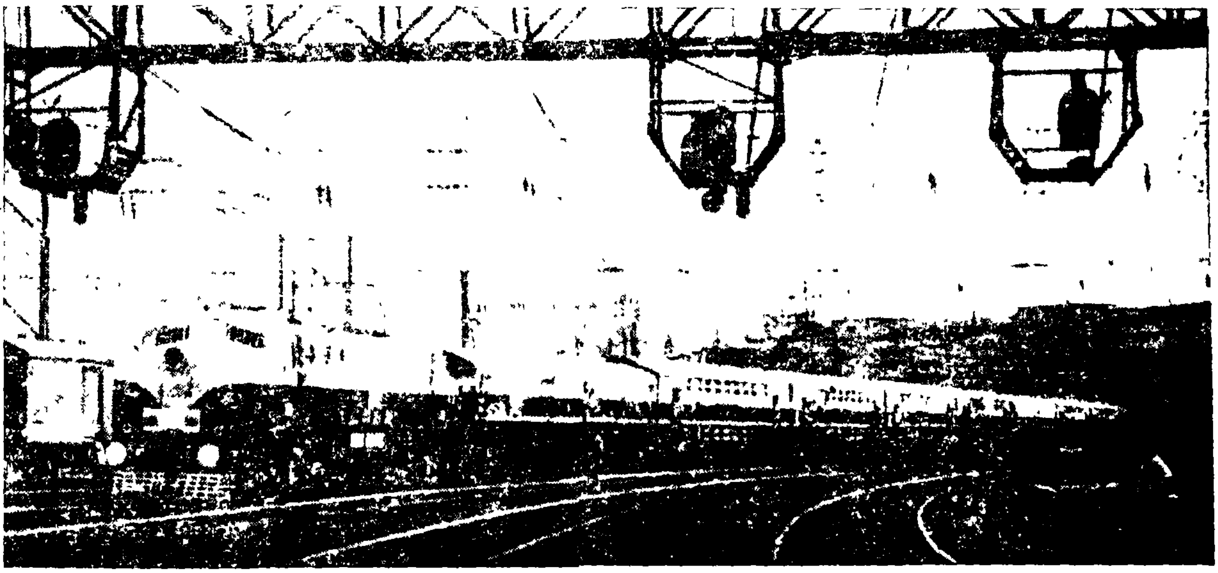
Railways to develop an integrated organisation for research, design and standardization as a substantial base to advance the indegenous manufacture of all railway equipment. We have now achieved near self sufficiency in design and manufacture of almost all types of railway equipment including some of the more sophisticated types. The import content in the railway purchases has been brought down to only seven per cent against almost entire dependence on imports before independence in 1947. About, Rs. 800 crore worth of stores are purchased by the Indian Railways every year.

Since independence, as a part of the general development schemes on the Railways, 8400 Kms. of track were doubled, 1130 Kms. were converted from metre gauge to broad gauge and 6649 Kms of new railway lines (inclusive of restorations) were laid upto 1977-78 Modernisation of railway traction in the form of dieselisation and electrification was undertaken on a large lines (inclusive of restorations) were laid upto 1977-78 traffic. The production of steam locomotives in the country has been suspended with effect from 1971 and steam locomotives. When the traffic demands started outstripping the limitations of steam traction, the CLW turned to production of electric locomotives in 1961 and is now producing even dual current AC/DC locomotives, the most sophisticated in the world.

Production of diesel locomotives was taken up in the country in 1964 at the Diesel Locomotive Works, at Varanasi in U.P. Over a thousand locomotives have already been manufactured there.

Earlier, the Integral Coach Factory had been established in Perambur in the South in 1955 to manufacture and furnish passenger coaches. Over 10,000 coaches of more than 60 types including air-conditioned sleeper and chair car, electric multiple unit coaches, AC two tier coaches and double decker coaches have been produced by this factory so far.

Besides these three major production units, the Railways have 46 workshops for repairs and maintenance of huge fleet of rolling stock of the Indian Railways Some of these took up production of



India's First double-decker train on its maiden journey

the old steam locomotives are gradually being replaced by either diesel or electric locomotives as and when they become due for condemnation At present, diesel/electric traction has been introduced on nearly 37,000 Kms.

The originating tonnage of freight traffic which was 93 million tonnes in 1950-51 has risen to almost 240 million tonnes. The rising trend is continuing and is expected to touch the 300 million tonnes mark in the next 5 years. The passenger traffic has also shown phenomenal increase. It has already touched 3700 million mark and is expected to reach about 4500 million by 1982-83. The average lead for freight traffic which was 470 Kms. in 1950-51, has gone upto 694 Kms. in 1978-79.

Locomotives, Coaches and Wagons

The Chittranjan Locomotive Works (CLW) was set up near Calcutta in West Bengal in 1950 for manufacturing steam locomotives. It produced 2351 wagons in 1960. This, coupled with production in other public sector units, has made the country self-sufficient in meeting internal demands.

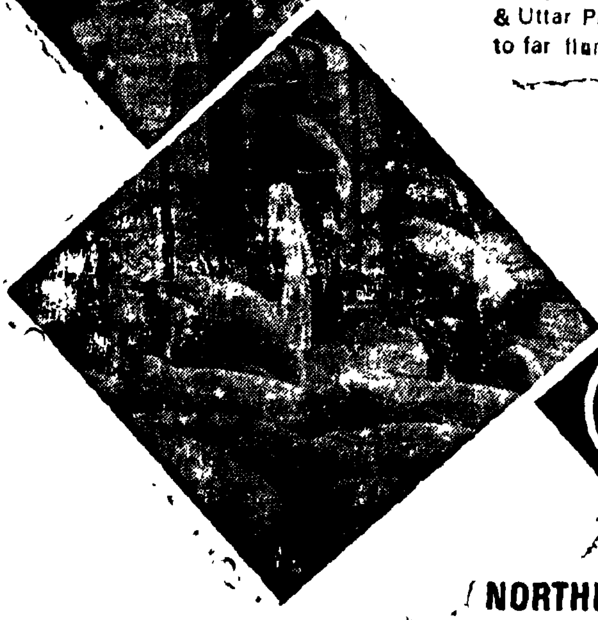
The Indian Railways have a fleet of over 11,000 locomotives, 34,800 coaching vehicles and 4,00,000 goods wagons.

Freight Movement

The railway system has developed in a manner that it transports bulk commodities over long distances leaving short distance traffic to roadways. The share of bulk commodities like foodgrains and fertilizers, petroleum products, steel, ores, cement and coal in the overall volume of revenue earning rai traffic is over 80 per cent.

To help faster movement of goods, super express goods trains operate at fixed timings on trunk and other important routes. Again, a Quick Transit Service (QTS) is available between principal commercial centres with delivery of goods guaranteed within





fixed period for a nominal surcharge. Among other advances are the container service providing door to door damage free fast transport and the freight forwarder service which consolidates and carries small consignments in wagon loads at relatively lower rates.

Planning

The Planning Commission had recently set up a Working Group for Railways to assess the development plans and the investment programmes for the Railways for the Five Year Plan 1978-83. This Working Group had very wide ranging terms of reference and they were, inter alia, expected to review the carrying capacity of the Railways and its utilisation as at present, to make a realistic assessment of the transport requirements for both freight and passenger traffic in the next five years and to formulate the Railways' development programmes and outlays required for each year of the Five Year Plan Since railway planning is essentially derivative planning as already mentioned other Ministries and Departments of the Government of India were requested by the Working Group to furnish their assessment of the traffic projections, duly taking into account their individual development programmes.

From the estimates furnished by different Ministries it was seen that the Railways may be called upon to carry a total originating freight traffic of approximately 3200 lakh tonnes by 1982-83 This assessment of the freight traffic was, however, considered somewhat optimistic. Keeping in mind the changes in the quantum and pattern of traffic on the Railways which are likely to take place in the next few years, consequent on the emphasis on development of agriculture, village industries, etc., we have assessed that the total freight traffic by 1982-83, which may be offered to the Railways, would be around 3000 lakh tonnes. Of this, coal alone would account for about 35 per cent and about 14 per cent would be the traffic connected with the steel plants. So far as passenger traffic is concerned, it is expected to increase at the rate of 3 per cent per annum for non-suburban and 7 per cent per annum for suburban traffic in the next five years.

For the increase in traffic in the coming Five Year Plan period as indicated above, the Railways will have to gear themselves up for meeting the transportation needs adequately and for this purpose, the various developmental schemes which will have to be taken up are being planned. The total investment in the Railways' development and replacement Plan during the next five years is expected to be about Rs. 3500 crore. Out of this, about Rs. 1611 crore are expected to be invested in acquisition of rolling stock comprising of about 76,000 wagons, 6440 passenger coaches including EMUs and 1100 diesel and electric locomotives. Procurement of 30 to 35 per cent of the rolling stock would be on replacement account and balance on additional account for handling the increased traffic anticipated.

The production capacity of the Railways' own Production Units, the Integral Coach Factory at Madras, the Chittaranjan Electric Locomotive Factory and the



Over one crore passengers are on the trains everyday

Diesel Locomotive Factory at Varanasi would be fully utilized to turn out the rolling stock required. Expansion of manufacturing capacity for diesel locomotives and passenger coaches in the country will also have to be planned in the near future, in order to meet the increasing demands for rolling stock in the coming years. Selective doublings on trunk routes and provision of other line capacity works including yard remodellings, improvement in signalling, etc. will have to be taken up in order to ensure that adequate capacity is generated wherever necessary and all bottlenecks are removed.

On the high density routes, we propose to run heavier freight trains with 4500 tonnes trailing loads with specially designed BOX wagons, to increase the throughput more economically. About Rs. 435 crore are expected to be spent during the next five years on such line capacity works. Replacement of out-moded singalling with modern types and provision of more sophisticated safety measures would also be taken up to improve the safety of train operation. These are expected to cost Rs. 110 crore. Electrification of some of the sections on trunk routes, where the existing traffic density is heavy, would also be taken up in order to reduce the cost of operation. About Rs. 120 crore are expected to be invested on eletrification projects in the next Five Year Plan.

New lines of Modernisation

Construction of new railway lines for development of backward areas would be taken up after carrying out necessary studies to determine the least cost solution for meeting the transport and communication requirements of individual areas. The Government are keen to build as many new railway lines as possible in backward areas, within the limited resources that are likely to be available, if it is proved by the studies that a railway line would provide the most economical

18 DPD/79—2

mode of transport for the area and would assist in its development.

The Workshops and Sheds which had been set up in the past for maintenance of rolling stock, are in need of major remodelling including replacement of old and out-moded machinery and plant. These workshops were set up several decades back and in order to meet the maintenance requirements of the increasing number of rolling stock including modern diesel and electric locomotives and passenger coaches, they require major renovation and remodelling. A start will be made in this direction also during the next five years in order to improve the efficiency of these workshops and reduce the maintenance expenditure on rolling stock.

Modernisation of track and rolling stock will continue to receive special attention during the next Plan period. Indian Railways will be going a big way for introducing long welded rails on our trunk routes. The provision of prestressed concrete sleepers and elastic fastenings would also be intensified. These measures would not only result in efficiency and economy in track maintenance but would also increase the safety and comfort of railway travel. Similarly, improvements will be carried out in the designs of diesel and electric locomotives which are being manufactured indigenously so as to make them suitable for meeting the demands of the increasing traffic. On the metre gauge, although our ultimate aim is to gradually convert all metre gauge trunk routes to broad gauge, in view of the colossal investments that would be involved, not to speak of the long time interval for carrying out such works under traffic conditions, efforts will be made to improve the conditions of track and rolling stock on the metre gauge, especially on the important sections.

It may be recalled that very recently, the Indian Railways have increased the maximum speed on the metre gauge for passenger services form the age-old limit of 75 kmph to 100 kmph. This was achieved by intensive research and trials and without any additional capital inputs but by merely improving the quality of maintenance and inspections.

Research and development work at the Research Designs and Standards Organisation, Lucknow, would be intensified in the coming years so as to improve our technology in all fields of Railways. It is proposed to set up shortly a Diesel Engine Design Laboratory with vehicle dynamics testing facilities, to enable us to accelerate our design efforts in the improvement to the existing locomotives and also to develop more sophisticated designs.

Export

We have also entered the field of export of railway consultancy in a big way by the setting up of two Public Sector Corporations, *viz.* Rail India Technical & Economic Services Ltd. (RITES) and Indian Railway Construction Company Ltd. (IRCON) under the aegis of the Railway Ministry. With the rapid strides we have made in the Indian Railways in modernisation and development of sophisticated railway technology and the considerable expertise which Railway experts in India have gained in implementing development schemes in India, we are now in a position to assist other developing countries in the field of Railways. RITES have already carried out several consultancy assignments abroad. IRCON is also proposing to take up railway construction jobs in other countries. Some of the countries in which consultancy work has already been carried out are Iraq, Iran, Syria, Nigeria, Philippines, Ghana, Zaire and Bangladesh. The activities of RITES and IRCON will be stepped up during the next Plan period. □

Planning for Transport

V. G. Bhatia

Transport plays a vital role in the nation's economy. It is of utmost importance that in planning for transport due care has to be taken for its 'facilitating' and 'developmental' roles. The author calls for certain re-orientation in the past practices and certain adjustments in the inter-modal allocation of investments while planning for transport.

IT IS WIDELY accepted that transport plays an important role in the smooth functioning of the economy. Without transport it would be virtually impossible for modern processes of production and distribution to function. If any proof was required about the importance of transport, this was recently provided by the failure of railways to deliver goods particularly coal which in turn has had its own repercussions on the production of power etc and there is little doubt that this failure of railways, among other things, has had significant impact on the growth of economy in the country. It is, therefore, necessary that transport facility must be provided in adequate measure where it is needed and when it is needed, otherwise the whole process of economic growth and even the smooth functioning at the present level of the economy will be disrupted.

Developmental role of Transport

While this facilitating role of transport is fully recognised, there is another role of transport which is equally important, perhaps even more so, namely the developmental role of transport. By providing accessibility and mobility, by opening up the interior of the country, transport can play a critical role in the economic transformation of the country, particularly in a country like India where the bulk of the population still lives in the rural areas and a very large number of the villages still remain cut off from the mainstream of economic life for fairly long periods in the year. Thus, out of 5,75,936 villages in the country 4,07,297 are yet to be connected by an all-weather road (the figures as on 31-3-1978). Special efforts have, therefore, to be made to provide all-weather road-links to these villages in the shortest possible time, if we want these people to participate in the developmental process. The advantage of an efficient transport system is not only to enable the primary producers to obtain better prices for their products or for consumers to have lower prices but also to develop a more efficient and effective system of production and distribution. By providing mobility and accessibility, transportation opens up areas and thereby acts as a catalyst for the development of the economy.

Similarly, while it is recognised that air transport provides a modern means of communication so essential for development and transformation of the economy, this facility has been restricted to a very small number of cities in the country. If air transport is to play an important role in the transformation of the economy, then steps would have to be taken to extend the air network in the country so that this facility is provided not only to large Metropolitan areas and large cities as at present but also extend it to medium size cities and towns so that they in turn can act as growth centres for the development of the regions/hinterlands which they serve.

Another example of developmental role of transport is in the development of exports from the country. India's share in world exports has come down from about 2.1 per cent in 1950 to 0.5 per cent in 1978. Thus merely to catch up with our past, India has to increase its exports four-fold. Even otherwise, we would have to improve our export performance considerably if we want to avoid relapsing into severe foreign exchange scarcity conditions, and its evil effects, which India has been subjected to until recently. This is valid even more so in the present context of our trade deficits, which may well surpass Rs. 3,000 crore this year, due to various factors including recent increases in import prices of petroleum, oils, and lubricants, the need for increased imports of cement, steel, fertilizers and even coking coal, and our less than expected success on the export front. The critical role which transport has to play in this process of boosting exports cannot be

Dr. Bhatia was, until recently, Adviser (Transport) in the Planning Commission and Member, National Transport Policy Commission. The views expressed herein are his own and not necessarily of the Planning Commission.

over-emphasized. Air cargo facilities, port facilities, containerisation facilities and even rail and road transport facilities related to exports, these would have to be given greater priority.

Similarly, development of tourism can bring enormous benefits to the country, the extent of which is not fully appreciated by all—not only in terms of earning precious foreign exchange, but also tourism's spin-off benefits in generating employment, income and in the transformation of the local economy, as also the economic benefits of reducing isolation through contacts with foreigners. Also tourism is export of services; it is labour intensive, has relatively low capital-output ratio, encourages artisans, handloom workers, craftsmen and may even revive arts and crafts and other traditional skills which may well be on the verge of disappearance. This would in turn lead to further exports of these products as the tourists develop the market for us. Finally our own people develop a sense of appreciation for our own heritage as a demonstration effect—seeing foreigners taking interest in and appreciating our heritage. This not only increases the awareness, but also creates a market, within the country for our traditional handlooms, arts and crafts which are highly labour intensive. The developmental role of transport in furthering tourism would therefore have to be explicitly recognised.

New Orientation

A somewhat new orientation would therefore have to be given to our planning for transport. Greater recognition would have to be given to importance of the developmental role of transport and more resources would have to be allocated toward that end, even if this means diverting resources from other needs of transport.

Thus large resources would have to be allocated for rural roads, to provide all-weather accessibility to people living in villages. The draft Sixth Plan has allocated Rs. 800 crore for the rural roads component of the minimum needs programme, and another Rs. 275 crore for the village roads in tribal areas and hilly regions. However, according to one estimate, Rs. 18,000 crore at 1978-79 prices would be needed to provide all-weather accessibility to all villages, of which almost Rs. 14,000 crore would be required to connect villages with population of less than 1,000 persons. It may be recalled that, as per 1971 census, out of 575,936 villages in the country, as many as 451,623 villages have population of less than 1,000, and these small villages had a population of over 166 million. It will thus be seen that even though a welcome beginning has been made in the Sixth Plan in this direction by allocating almost Rs. 1,200 crore for rural roads, this can at best be considered a token allocation. At this rate even at the turn of the century, not all our villages would have an all-weather accessibility. It is difficult to say whether, in a country like India where 80 per cent of the population lives in villages, people will be willing to wait that long. It is clear that considerably larger quantum of resources would have to be allocated for rural roads to provide all-weather accessibility to our rural population. And, in the meantime, concurrently, search would have to be on for finding less expensive ways of providing the accessibility. One suggestion in this **context may well be to provide all-weather bicyc tracks or cycle-rickshaw tracks with proper drainag and engineering, instead of waiting for an all-weath motorable road to every village. No serious considera tion has yet been given to this idea.**

Similarly it is also clear that considerably mor resources would have to be allocated for fulfilling th other developmental roles of transport. Additiona resources would have to be provided for extending air transport facility to medium size towns, say, o 200,000 population and above to begin with, an to centres of tourist importance. More investmen would also need to be made in transport for development of exports—in ports, in containerisation facilities (container berths and inland container depots), for air cargo etc. and for transport for developmen of tourism.

Different Modes of Transport

In planning for transport due care would therefore have to be exercised to make sure that both the roles of transport, namely the "facilitating" and the "developmental" role of transport are fully taken into consideration. In fact, while not neglecting the former, accent would have to be on the latter, namely the developmental role of transport.

Transport has been making heavy demands on the investment resources of the country. The share o transport in the total investment in the public secto has been going down somewhat since the plannin era started. It is still very large, viz. about Rs. 8,35(crore. Bulk of this investment goes to railways, i.e Rs. 3,350 crore as per the draft Sixth Plan docu ment. Civil Aviation and Shipping also have a larg share of this investment namely around Rs. 800 an 640 crore respectively. Another Rs. 2,000 crore g to development of roads (all kinds—national high ways, State highways, district roads and rural road and Rs. 390 crore for major ports. The allocatio for inland water transport is only Rs. 43 crore, an for coastal shipping also it is not much.

Almost 40 per cent of total investment in transpor sector has been going to development of Railwa and a total of Rs. 10,784 crore has been allocate to Railways since the first Plan, part of which has o course been used for replacement and renewal o assets.

In planning for transport, the main question which ha to be answered is the inter-modal allocation of invest ment (i.e. between the different modes of transpor which in turn depends upon the perceived role whic each mode of transport is expected to play in th total transportation system in the country, their ow inherent strong and weak points, (which are in herent in the technology itself), their relative cos and benefits, not merely to the operator or the use but cost and benefit to the economy as a whole, an thus there is no conflict between different modes o transport. All this is true; however, due to overa constraint of resources, it has not always bee possible to make judicious allocation of resources be ween the various modes of transport and there ha been complaints almost for each mode of transpo

that they have not been allocated adequate resources. The fact, however, stands out, as mentioned above, that the bulk of the public transport investment in the country has gone to railways and then to roads, civil aviation, ports and shipping. While it is recognised that inland water transport and coastal shipping have also important role to play in the transportation system of the country, these two modes have by-and-large been neglected. Special efforts have to be therefore made to revive them and allow them to play their due role.

Energy and Transport

The need for economising on use of energy cannot be over-emphasized, particularly in the present context of rising prices of oil. Transport is a major consumer of energy, particularly oil, and therefore it is obvious that in planning for transport we must give due consideration to this aspect. However, energy aspect is not the only consideration, there are other aspects which must not be lost sight of, such as solving the problem of poverty and unemployment, distribution of income, generation of savings, decentralisation, the scarcity of capital and therefore the need for minimisation of capital-output ratio in the economy to maximise per capita growth in the economy.

Within transport, from the view point of energy use, different modes of transport have different efficiency. Thus water transport (coastal shipping and inland water transport) are most energy-conserving For passenger transport both rail (by diesel traction) and road transport (diesel buses) are just about equal in the consumption of diesel per passenger -km. whereas railways (steam traction) is far less efficient so for energy consumption is concerned Electric traction on railways is considered to be least consumer of energy. Air transport, of course consumes maximum amount of energy, say, per passenger-km.

While the facts are known, the question is that of policy recommendations. It would be foolish to jump to the conclusion that because air transport consumes maximum amount of energy, therefore, we must banish it. Nor would it be wise to lay down the law that because railways carry freight at less consumption of diesel per tonne-km, all freight must be carried by railways and trucks should be done away with or discouraged. Similarly it would not be prudent to conclude that all railways should be electrified (irrespective of the density of traffic) or that steam locos should be banished forthwith, because they are most energy-inefficient.

Such solutions are rather simplistic and unwise. All aspects must be given due consideration and policy and planning decisions must be made judiciously. Take, for example, electrification. It is highly capital intensive and unless density of traffic crosses certain thresholds it would not be prudent to go in for electrification. Very few sections on the railways would qualify today for electrification.
Already in the Indian economy, our capital-output ratio is rather unduly high (6 : 1). In spite of all the planning and belt-tightening that we have done, our rate of growth of per capita income over the last twenty odd years has been a paltry 1.3 per cent per annum. Since our base figure for per capita income is very low, among the lowest in the world and far behind most developing countries, unless we substantially increase the rate of growth of per capita income, triple or quadruple it, in the near future, there is little hope for solving the problem of poverty in the country. The internal savings rates in the country are already rather high (19 per cent) and it is difficult to visualise that either more taxes can be raised or more deficit financing can be resorted to, without causing too much inflation. Thus reducing the capital-output ratio and thereby maximising the growth of the economy from whatever savings and investments we are able to muster is as important, or perhaps even more important than reducing energy consumption Similarly maximising employment, bringing accessibility to the rural population, maximising the potential for generating savings, and decentralisation, these are also equally important factors, if not more so, than saving fuel. And in all these aspects road transport has an edge over rail. Thus we cannot lay down the law that because any particular mode of transport has lower consumption of energy (per unit of tonne-km, say) it should automatically be given preference vis-a-vis other modes of transport. And yet, these are precisely the kinds of arguments one hears of because of, viz, energy aspect, road transport should be curbed even further and rail transport should be resorted to. We must take a balanced view and not listen to any particular lobby—be it railways or road transport or air transport.

Finally, it may be mentioned that India's energy consumption is really not that high when compared to many other developing countries as will be seen from some figures given below. Besides there is considerable scope for economising in the use of energy without jeopardising our per capita income or growth. India's per capita energy consumption (in terms of kg. of coal equivalent) in 1976 was 218 kg. whereas that of China (People's Republic) was 706 kg., that of Egypt 473 kg., that of Syria 744 kg and that of South Korea 1,020 kg In terms of energy consumption per U S. Dollar of GDP in 1976, the figure (again in terms of kg. of coal equivalent) for India was 1.6 kg. whereas the figure for Bangladesh was 0 3 kg. Pakistan 1 2 kg , Sri Lanka 0 5 kg., Indonesia 0.9 kg., Egypt 1.8 kg., Syria 1.0 kg., South Korea 1.7 kg. and China (People's Republic) 4 8 kg. These figures show that India's use of energy per unit of income (GDP) is relatively high and we could certainly economise on use of energy without affecting adversely our national income. This is where our efforts should focus on, rather than curtailing use of energy per se.

Within the transport sector also there is considerable scope for reducing the use of energy without compromising the contribution each mode of transport can make to the economy. For example, there have been considerable improvements abroad in the design of motor vehicles with a view to reducing fuel consumption. In India however our cars, buses and trucks are basically old models and because of protected market they enjoy, there has been little incentive for them to put in any major efforts in this dirction. Similarly, by improvement of our roads

which are in very poor condition by and large, fuel consumption can also be brought down considerably. And as mentioned earlier, by using large pay-load vehicles including truck-trailer combinations we can also reduce fuel consumption considerably per tonne-km. In addition, our capital investment in number of vehicles required to carry a certain amount of traffic can also be reduced significantly which itself will pay for the cost of upgrading the roads. Within railways too there is scope for economising on use of fuel, e.g. by concentrating on long distance mail and express trains and on concentrating on carrying bulk traffic in full rakes on point-to-point basis in circular movements. This would require establishment of bulk depots, however, which must be taken up in right earnest without further delay. Finally, we should combine rail and road transport wherever feasible by taking up what is known as "piggy-back" operations whereby trucks or trailers are loaded on to flat wagons and carried long distance by rail and at the other ends driven away to their destinations. This "piggy-back" operation has become a great success abroad particularly in a large country like the USA and in India too this holds considerable promise and can make a signficant contribution to economising on fuel.

Financing of Transport Plans

Resources generated by each mode of transport and the contribution they make to the exchequer of the country is yet another aspect which must be taken into consideration in the planning of transport. As already noted, we have practically reached the limit of our belt-tightening and there is a limit to raising taxes further or augmenting our resources through deficit finacing without furthering inflation which is self-defeating and counter-productive. Thus we must encourage generation of internal resources and savings, and the modes of transport which make net contribution to Government's resources ought to be given encouragement.

Different modes of transport have different characteristics in this respect. Practically the entire development of air transport is financed from their internal resources and this is a major reason why investment in air transport has been growing at much faster rate than other modes of transport. In fact, even the ground facilities i.e. airports and other infrastructure for civil aviation ought to be financed from internal resources generated by air transport sector as a whole and airlines should be persuaded to make capital contributions to finance airports etc. i.e. the airline passenger should pay for it and the development of air transport/civil aviation facilities should not be a burden on the public exchequer or governments' tax resources. The road transport sector also makes a significant contribution to the tax resources of the country. The total tax revenue raised by Government (both Central and State) are significantly more than the expenditure incurred by Government on the development and maintenance of roads in the country as a whole. As per one estimate, the revenue from road transport in 1977-78 was Rs. 1,887 8 cro whereas the expenditure on roads (both by the Cent and the States) in that year was Rs. 829.5 crores, th contributing a net revenue of Rs. 1,058.3 crore in o year alone. Thus, expenditure on roads works out 43.0 per cent of revenue collected by Governme from road transport : the same was true, by and larg for earlier years as well. The tax revenue collect by Government per sector-vehicle registered in t country works out to Rs. 5,900 in 1977-78, Rs 5,4 in 1976-77 and Rs. 5.272 in 1975-76. Thus, roa transport is not only self-financing but a net contri butor of resources for the country and Rs. 1,000 cro per year of net revenue is not a small figure. So f as railways are concerned, the situation is rever however. The railways are a net burden on the e chequer in the sense that only a small part of the Plan outlay is financed from their internal resource that too primarily for renewals anl replacements I fact their internal resources do not even cover full the cost of replacements and renewals. Thus th entire development of railways is financed from th general revenues and is therefore a burden on th meagre tax resources of the country and this burde is currently Rs. 300 crore per year. Similarly, th public sector road transport undertakings are also a burden on the exchequer-both for their capital requirements and the losses they incur. Thus the bulk of about Rs. 750 crore of investment in public sector provided for in the draft plan document for the Sixth Plan period has to be provided by the exchequer, and in addition the Government has to make up the losses which as per one estimate, as already mentioned works out to a figure of about Rs. 300 crore. This is quite a burden. Private sector road transport, both buses and trucks, however are no burden on the Government tax resources, they generate savings and provide substantial net revenues to Government.

Summing Up

Each mode of transport has its inherent strengths an limitations and it is the task of planning for transpo to ensure that each mode of transport is allowed t play its due role in the transportation system of th country, special accent being on the developmenta role of transport. Certain reorientation is called for i our past practices and certain adjustments are neede in inter-modal allocation of investments. Despite th energy aspect, larger investment is needed in road and road transport particularly with a view to providin minimum accessibility of an all-weather road link or a least an all-weather bicycle track for all our village The national highways and State highways also nee to be upgraded with a view to plying of larger pa load vehicles which would generate sufficient saving in terms of reduction of fuel consumption and capit savings through fewer vehicles needed to carry th same traffic, as to pay for the cost of upgrading th roads many times over. Air network in the countr needs to be extended substantially to bring to mediu size towns the benefits of modern means of communica tion which air transport represents so that these mediu size towns can act as growth poles for their hinterlan and countermagnets to the metropolitan cities. W must also take other measures and provide adequa transport and other infrastructure facilities in mediu

(contd. on page 3

We have conquered distance and time by introducing fast moving means of transport such as Airbuses, superfast trains, and super deluxe buses. But the fruits of transport planning have transformed the lives of urban elite whereas the rural folk still live in villages far removed from some kind of road. So the bullock cart is playing a very important role in rural transport even today. The author vividly explains the progress achieved in the laying of roads in rural areas and the research being conducted in the modernisation of bullock cart.

RURAL TRANSPORT

R. R. Rao

ADEQUATE transport facilities accelerate socio-economic development of the countryside in India. Provision of all-weather rural roads facilitates quick movement of village traffic at a cheap cost and helps to remove centuries old social barriers on the mobility of rural folk. A network of pucca roads connecting isolated villages renders wings of public administration, such as revenue and police, more efficient and their benefits accrue to the villagers. Vegetables, foodgrains and products of animal husbandry which are being harvested in plenty now-a-days cannot find their way to the nearby towns unless villages are connected by proper roads. In turn the villagers are kept in the darkness of ignorance regarding the latest methods of cultivation, such as rational use of fertilisers, insecticides and better farm practices.

Even though we have realised the value of rural roads, still 60 per cent of our existing roads are unimproved dirt surfaces that are impassable during rainy season. In India 190 villages have only one town. Only 2.6 per cent of the villages are located at a distance of about 15 kms from a town. If we take into consideration such facilities as health, primary education, marketing, all weather transport and communication, people living in 65 per cent of villages have to trek a distance of about 8 kms. About one third of villages are connected only by foot tracks with the nearest telegraph office, primary school, hospital and such other facilities. The rural folk who enjoy railway or metalled road amenity is only about one fourth of the total.

To understand such a poor performance in the field of rural roads and rural transport it is necessary to trace the history of road construction in India.

History, Planning and Development

During the 50 years before World War II more attention was paid to the railway system as a means of transport and there was a comparative neglect of road development. But during the war period the railways failed to cope with the passengers and goods traffic. Then the fact that alternative means of transport were lacking came to light.

As a result, a comprehensive plan for a period of 20 years, for road development was formulated in 1943. Modern era of road construction came into being with the Road Plan popularly called "Nagpur Plan" at an estimated cost of Rs. 372 crore. The plan envisaged that at the end of 20 years hence, (that is 1963) no village in a well developed agricultural area should remain more than 8 kms from the main road and in underdeveloped area, this distance was not to exceed 32 kms. This plan had a good start, but enthusiasm tappered off on account of critical financial position caused by partition and allied problems such as rehabilitation, and food shortages. As a result Road Plan was almost killed.

The survey conducted by the UP Government in 1967 revealed that on an average 36 per cent of villages were not connected by any type of roads and that about 37.8 per cent were just connected by unsurfaced roads. Even in a comparatively well advanced State like Maharashtra the situation was not much different. The report on Regional Transport Survey of Maharashtra (1966) shows that about 50 per cent of villages surveyed had no approach and 84 per cent were off the main road. The figures relating to all India also exhibit pathetic conditions of rural roads.

In a real sense road development in India starte with the commencement of Planning. Great emphasi was laid on the development of rural roads by th national planners who realised that it was very muc necessary to build new village roads, before other eco nomic plans could put on wheels. Before our planne the problem at that time was to link up the length an breadth of the country with a minimum basic networ of road communication. A sum of Rs. 147 crore w allocated for roads and road transport in the First Pl and that provision was fully utilised. At the beginni of the plan, India had 155200 kms of metalled ro and about 235200 kms of unmetalled roads. First P

R. R. Rao is our Assistant Editor.



An improved model of Light weight Bullockcart

Year Plan proposed that about 26,000 kms to 27,000 kms of kuchha roads would be 'constructed in rural India under the Community Development Programme. The aim was to connect important villages with marketing centres and district head-quarters. Satisfactory progress had been achieved. People evinced tremendous co-operative spirit in constructing about 7300 kms. of metalled roads and 28800 kms of unmetalled roads. By the end of first plan it realised that the expenditure on road transport was not enough in relation to the increasing demand of the people for road transport. First Plan's high rate of agricultural growth had one of the pushing elements in rural demand for road transport.

In the Second Five Year Plan allocation for roads and road transport was of the order of Rs. 263 crore and actually Rs. 242 crore was expended. During the Plan period about 16,000 kms of surfaced roads and 32,000 kms of low type road were expected to be laid and 16,000 kms of surfaced roads upgraded. In the Second Five Year Plan 211 thousand kms of road was laid. Out of this 53 thousand kms were surfaced roads and 158 thousand kms were unsurfaced.

The mileage targets envisaged in the Nagpur Plan had been achieved by the end of Second Five Year Plan, but the road system remained deficient in many respects such as surface standard, weak or missing bridges etc. So the task of assessing the transport requirements was entrusted to the Chief Engineers who chalked out a new Road Plan for the 20-year period 1961-81. Among others, it was suggested that the average distance from a village in an agricultural area to a metalled road would be reduced from 8 kms. as envisaged in the Nagpur Plan to 6.4 kms. Also that from unmetalled road would be reduced from 3.2 kms to 2.4 kms. The cost of the entire scheme was estimated at Rs. 5200 crore. In the third five year Plan an amount of 297 crore was allcoated for roads and road transport. Actually Rs. 467 crore were expended. Of the total road of 188 thousand kms laid in this Plan period 51 thousand kms were surfaced roads 137 thousand kms, unsurfaced road.

In the annual plans for 1966-69, an amount of about Rs. 290 crore was allocated under the head "roads" whereas the actual expenditure was about Rs. 309 crore. In all these annual plans emphasis had been laid only on completion of projects already taken up. About 67000 kms of roads were constructed. Out of this length of surfaced roads was 39,000 kms and unsurfaced roads 28,000 kms.

A one-man committee was set up under the chairmanship of Shri H. P. Sinha in 1967 to study and report on the problems of rural roads in the country Rural roads, according to the Committee, included village roads (from one village to another and to mandis) and other districts roads only. The committee felt that the targets for road development need not be kept any higher than those indicated by the Chief Engineers. Therefore, the committee envisaged the development of a total of 3,24,000 kms of village roads and 23,84,000 kms of other district roads. Total cost will be Rs. 1,430 crore (Rs. 535 crore and Rs. 895 crore respectively). Also the committee suggested that a high level Board to look after the rural roads be constituted.

The objective in the fifth plan under the Minimum Needs Programme (MNP) was to link up villages having a population of 1500 with a village road. There were about 29000 such villages. As a result it was expected that road length under rural roads would increase by about 75,000 kms during the plan period Actually about 12,000 villages were covered. A part from the MNP, some additonal provisions had been made in the State Plans for rural roads to connect villages of smaller population.

According to the Draft Plan for 1978—83, one of the major objects of the Government is to "discourage the migration of population from villages to cities—congested metropolitan area . . . It is therefore proposed to concentrate on the improvement of transport facilities in the smaller and medium size towns so that such migration.........is attracted to these towns instead

of to the larger cities". Also road development programmes occupy a pivotal place in the Plan 1978—83, as roads in general, and rural roads in particular, have a considerable impact on rural development, rural industries and agriculture.

In the draft plan provision is made to link up the remaining villages, about 17000 having a population of 1500, with one another. In addition half of the number of village having a population between 1000—1500 will be provided with a link road. High priority to rural roads in this plan, is evident from the allocation provided, namely, Rs. 800 crore which is four times of the expenditure on rural road in 1974—78, about Rs. 200 crore Also Rs. 275 crore was set aside in the State sector to construct roads in the tribal areas. In the Plan, greater attention will be paid to the construction and alignment of rural roads so that they may not get destroyed or damaged during rainy season.

Agriculture and Transport

Ours is essentially an agricultural country About 75 per cent of our people live in villages and on agriculture. Poor and inefficient tran port facilities hinder quality and quantity of agricultural progress.

Low popularity along with low level of use of inputs may be attributed to a great extent to high cost of transport and to fewer extension contacts. Dissemination of agricultural information is through extension service set up by the State. Lack of adequate and quick means of transport makes the farmers pay very few trips to the place where extension services are available. Also extension personnel cannot often visit the isolated villages. It was estimated that the number of visits of extension personnel per year to the roadside villages with good transport facilities was about 6 times the number of visits to the isolated villages.

Transport facilities are essential to transfer agricultural inputs like fertilisers, pesticides, seed material and farm equipment from the points of production to the doors of millions of farmers. Not only that, surplus agricultural commodities are to be transported from villages to market centres It has been observed that even though the distance from the market centres to isolated as well as roadside villages is approximately the same, the cost of transportation per tonne-km is nearly double for isolated villages as compared to roadside villages. Reason is obvious. Farmers of isolated village have to use bullock carts to the nearest road and then use trucks resulting in more cost and time.

Table I

Popularity of selected equipment in the Tungabhadra Project Area

Items	Roadside Villages		Isolated Villages	
	Percentage of villages having equipment	Average No. of equipments per village	Percentage of Villages having equipment	Average No. of equipments per village
Tractor	95	2	24	1
Mould Board Plough	100	42	95	10
Paddy Rotary Weeder	100	5	24	2
Sprayer	100	15	93	2
Duster	100	11	89	2
Seed Cum Fertiliser drill	58	3	25	1

Firstly, improved farm tools do not become popular in remote villages, when compared to roadside ones. It is evident from table I prepared on the basis of a survey conducted in Tungabhadra Project area in the year 1973.

Secondly, adoption of improved agricultural practices such as use of high yielding varieties of seeds, fertiliser application, and plant protection are relatively more popular in roadside villages as compared to remote ones. This fact was amply proved in table 2 compiled on the basis of the above referred survey in the Tungabhadra Project area.

The study indicated that the percentage of farmers adopting the improved farm practices was low in isolated villages. Moreover the level of adoption was considerably very less.

Proper communication facilities enables utilisation of land to the maximum adavantage of the society. Lands far away from the market have been brought under the plough. Thus not only the number of hectares of land brought under cultivation increased but the productivity of lands which had exhausted due to long unwise use, has increased through the application of improved manures and fertilisers.

Means of Rural Transport

In rural India means of transport are many and varied depending upon the region. In hill areas and in other places where no other means of transport are available human porterage still remains fairly significant in spite of considerable economic progress achieved by our country.

According to the needs of people living in different regions animals like horses, camel, bullock and elephant are all used for transport services. The reasons

18 DPD/79—4

Table 2

Percentage of farmers adopting improved farm practices in roadside (RS) and Isolated (IS) villages of dry-cum-wet (DCW) and wet localisation of Tungabhadra Project Area

Particulars of Practice	Jowar				Cotton				Groundnut				Bajra				Paddy	
	Wet		DCW		Wet		DCW		Wet		DCW		Wet		DCW		Wet	
	RS	IS	RS	IS	RS	IS	RS	IS	RS	IS	RS	IS	RS	IS	RS	IS	RS	IS
Percentage of farmers adopting high yielding varieties .	25	3	27	3	29	3	19	2	17	2	19	3	69	20	69	13	64	9
Percentage of farmers applying fertilisers.	36	6	36	7	39	6	42	7	88	48	85	40	73	30	74	17	96	67
Percentage of farmers adopting plant protection measures .	31	4	20	5	37	4	2	6	74	15	75	15	52	17	65	14	74	20

are simple and obvious. No other means are available or are economical. No proper road is needed. Animals can render a through service between the points of loading and unloading. Cheapness of animal transport is a very desirable and important feature. In case of animals, repairs and renewal costs are almost negligible A few hours of rest is all that is required to keep pack animals in full efficiency. All animals subsist on grass and vegetation which are in plenty on roadsides. Further the services of animals like bullocks can be used for agricultural purposes as well as for transport.

There are about 800 lakh animals in India—700 lakh bullocks, 80 lakh buffaloes, 10 lakh camels and 10 lakh horses. Out of 800 lakh work animals, 740 lakh are assumed to be in rural area and 60 lakh in urban area.

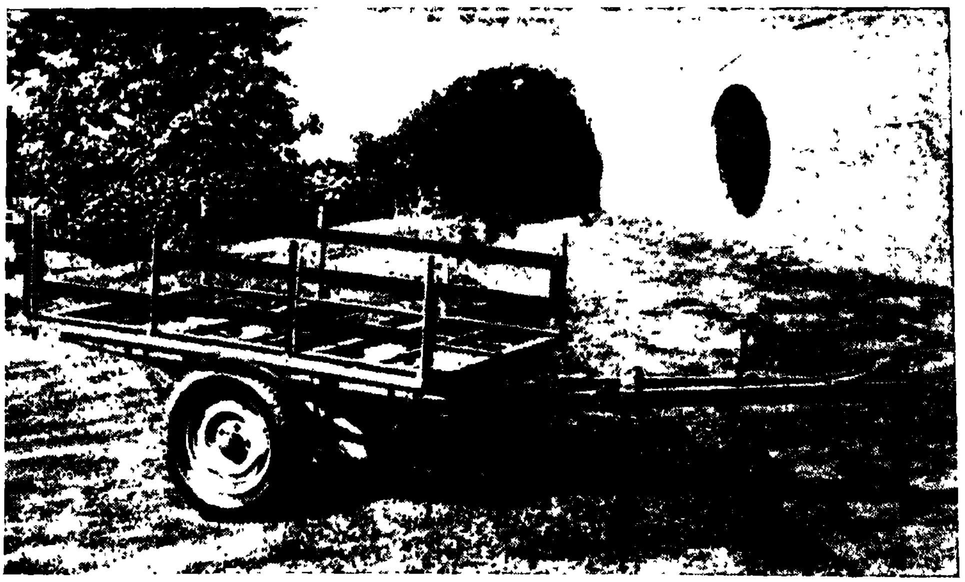
Bullock cart

It is common knowledge that bullocks remain the backbone of the agricultural economy of the country providing both agricultural and rural transport services. Bullock cart has come to remain the most important means of transport in rural India, even today. Bullock carts have been tsansporting the agriculture production to mandis and local markets, admirably and there is no need for substituting it by any other means of transport. Planning Commission conducted a study in 1959-60 and arrived at the conclusion that the bullock cart carried about 58 to 96 per cent of the produce arrivals in five of the country's regional markets. The Indian Institute of Management, Bangalore observed in a survey conducted over 40 districts that on an average over 60 per cent of all goods from farm to mandis including those for intermediary destinations was carried by bullock carts. It is estimated that there are about 150 lakh bullock carts in India.

In the system of bullock cart, including the cost of the animals ,the total investment may come to about Rs. 3000 crore. Freight moved by carts is estimated at between Rs. 15000 to 18000 crore tonne-km per year.

As various regions' economic development progresses, motor vehicles become more and more popular.

Tyrised Bullock Cart to avoid Road damage



their own place. They are cheap and economical for short journeys or in places where the streets are narrow and congested, and where loading and unloading take a lot of time.. Also where traffic is not considerable then motor vehicles are uneconomical. In India, a 2.5 ton lorry for a run of 160 km may be the cheapest means of transport but for short rural distance of 5 to 10 kms, the bullock cost is still unbeaten.

The traditional and most popular cart is made of durable material like hardwood, iron or mild steel. To either end of an axle (usually closed in a wooden box, and made of wood/steel/a combination of the two), are attached two large sized wheels. Above the axle box is the platform on which the load to be carried is kept. Either to the platfarm or to the axle, the yoke is connected by two draw bars or pull beams. The cart is hauled by a single animal or a pair and the later one is more popular in rural areas.

Even though bullock cart has many advantages as the only means of transport in rural areas, its design has been found full of flaws. The drought power of the animal is wasted due to friction from rough bearings and crude and inefficient harnessing. The wobbling rim of the wheel cuts into the road and damages. Tare weight runs high. As such different institutes engaged in the system of transport introduced many innovations. Some of them are worth nothing here.

In 1930, Dunlop Rubber and Tyre Company Ltd., fitted the cart with pneumatic tyres and tubes, alongwith special dish shaped hubs and concave-metal rims. Later steel exles were also introduced. Soon brakes were furnished Now about 6 lakh such carts are there in the country. The objective was to avoid the damage caused to the roads by the iron rim holding together the segments of the traditional wooden wheels. Reduction in road damage would be a definite economic gain. According to a survey conducted in 1948, it was found that the cost of repairing the 12 months was Rs. 254. It was higher than the th cost of a bullock cart about Rs. 150 in 1934. Desi of the cart has not undergone any significant chang So one can easily imagine the present national loss c account of the damage to roads by carts.

The Central Road Research Institute designed camel cart with improved capacity to drag in the ari Rajasthan desert to which water for cultivation i brought from the Rajajsthan, the Bhakra Canal sys tems. These carts are now being used extensivel for transport construction materials by the State Pub lic Works Department and so to extending the wate channels upto Jaisalmer.

The neck of the animal forms the third point o the load. So the animal has not only to carry a weigh of about 55 kgs on its neck but drag the loaded car also. So this tires the animal early and has delete rious effects on its health in the long run Attempts are made to ensure a balanced load which would reduce the weight on the neck of the animal An improved and multi-purpose cart of tare weight was designed. Yoke was improved with a padding with the object of reducing the neck callosity in the animal

Modernisation of bullock carts, if successful will result in increase in carrying capacity, decreased strain to the animal and the elimination of damage to the roads. All these will give a tremendous boost to the rural economy and eventually to the national economy If the carrying capacity is doubled, (this has been achieved with pneumatic tyres) the freight and the income of the rural people would be doubled. If improved designs could increase the economic life of the bullocks (which is now about 10 years) at least by one year, then the freight carried would be increased by 100 per cent. Saving the roads from damage would save the exchequer crores of national wealth Improvement in bullock carts would better the plight of over 200 lakh people employed in the system. □

The four metropolitan cities of India abode more than a third of the total population of the [illegible] the difficulties in planning for metropolitan transport have been ever on the increase.

Cycles, scooters, cars, taxies, tongas and carts, justling with each other make a hetrogeneous [illegible] traffic on the roads of these cities. The varying speed of these modes of transport requires an effective and scientific control.

Planning for Metropolitan Transport

Gauri Shanker
A. K Bhaduri

THE planning of Metropolitan Transport is closely linked with the demographic expansion pattern of the metropolis and characteristics of commuter travel. While the overall population growth rate of the country was 2.6 per cent per annum during 1950-60 it was 3.6 per cent for the metropolitan cities compared with the urban population growth rate of 5 5 per cent for the world as a whole The present Indian growth rate of 3.3 per cent of urban population is low but the growth is impressive in absolute terms. The four metropolitan cities in India have also had accelerated rate of growth keeping pace with the fast increase of urban population. The fast growth rate and the projected population for our most important cities is given below :—

Table 1

Year	Population in Lakh			
	Calcutta	Bombay	Madras	Delhi
1931	12 2	12.7	7 1	4.5
1941	21.7	16.9	8.6	6.9
1951	26 9	29.9	14.2	14.4
1961	57.37	41 5	17.3	23.6
1971	70.3	59.6	35.7	36.47
1981 (Projected)	93.0	72.5	42.6	53.2
1991 (Projected)	140.0	98.00	53.8	72.9

The core of the cities has already reached saturation; the cities are fast expanding towards suburbs as may be seen from the density of population given below :

Table 2

Calcutta	28759 persons per sq. Km.
Bombay	45588 persons per sq. Km.
Madras	33000 persons per sq. Km.
Delhi	60 percent of the polulation live within 18 sq. Km.

More and more person are commuting from the suburbs. The average lead of suburban rail commuters ranges from 16 Km to 32 Km. From the table given below it will be noticed that the suburban traffic in the railway has registered a much higher rate of growth than the pace of growth of urban population in the metropolitan towns.

Table 3
Growth (1950-51 to 1977-78)

Service	No. of passengers	Passenger Kms	Lead
Suburban	18.59	3	1.05

Trip Distribution and Travel Mode

The distribution of the trips by different modes is governed by the economic structures of the city and its people as well as the level of service provided by the Transport System. In the west, the mass transport share is not less than 88 per cent of the total trips e.g. London 90 per cent. New York 88 per cent. Tokyo, a city in the east has a network of public transport which accounts for 92.4 per cent of the total trips. Out of the four metropolitan cities, except Bombay we are no where near this level of service; Delhi and Madras are particularly low in the list as may be seen from the table 4 given on next page.

From a perusal of the table 4 it is clear that the mass transport facilities are quite inadequate and this has resulted in personalised modes of transport like cars, scooters and cycles. The number of scooters on Delhi roads in 1975 was twice the combined strength of scooters available in Bombay, Calcutta and Madras. There are 6 lakh cycles plying in Madras Delhi has outnumbered Madras and has about 8.5 lakh cycles.

Today the traffic on the roads of metropolitan cities is a hetrogeneous mix with cycles, scooters, buses, cars, taxies, tongas and carts jostling with each other. The varying speed of these modes of transport has had a very adverse effect on the level of congestion and speed of buses plying on the roads. The average speed of the public buses in the metropolitan cities of India is not more than 14 kmph.

Modal Split

It is therefore obvious that progressive increase in the use of mass transport is necessary to lessen the vehicular load on the roads specially bicycle, scooters,

Gauri Shankar is the Chief Project Officer and A. K. Bhaduri, the Traffic Superintendent, of M. T. P. (Railways), Delhi

Table 4

City	Total Daily Trips in Millions	Percentage of Mass Transport Trips to total Trips	Breakup of passengers carried by Mass Transport		
			Rlys.	Trams	Bus
1	2	3	4	5	6
Bombay	4.8	85	50%	..	55%
Calcutta	5 3	80	25.5%	35.5%	39%
Madras	2 4	63	20%	..	80%
Delhi	2 3	41	4%	..	96%

autorickshaws which are positive traffic hazards and main contributory factors to congestion. In any transport system planning, a quantification of the future desirable modal split would from the basic requirement both to decide the level of service to be provided and to determine the fare structure and other policy imperatives in the planning of public mass transport systems.

The Metropolitan Transport Team of the Planning Commission recommended that all efforts should be made to increase the modal split by public mass transport in Delhi to 75 per cent by 1981. The Working Group set up recently however did not find this target feasible in near future. They pegged it at a lower figure of 60 per cent. They have suggested introduction of supplementary systems of transport by way of intra urban Rail Commuter Services which would cater to six lakh trips.

Characteristics of Commuter-travel

Before the planning for metropolitan transport can be taken up or system selection done, the characteristics of traffic pattern have to be studied and kept in view. In contrast to small town traffic, traffic in metropolitan cities has special characteristics because of the peculiar configuration of the metropolis. The central business districts (CBD) are the centres of employment. They are located in the heart of the metropolis where the population and the traffic are both dense. These centres had sprung up when the British Colonial masters set up their trade. The cities gradually expanded in the direction where there were no natural barriers like sea, and river. They continued to expand on the fringes, the residence and the work centres getting farther and farther apart with the result that today the commuters travel daily from the suburbs to the work centres in the morning and return in the evening The work trips which constitute 60 to 70 per cent of the total trips are mostly confined to fixed morning and evening hours. In Bombay, Calcutta, Madras and Delhi, the peak hour traffic constitutes—two to 2.5 hour in the morning and two to three hours in the evening On an average 10 per cent to 12 per cent of the total commuters are carried in each peak hour. In other words, 40 to 45 per cent of the total commuter traffic is carried in peak hours. The flow of traffic is more or or less tidal in nature. Such traffic demands automatically warrant a transportation system which provides

(a) A fast and punctual service

(b) high frequency

(c) capacity to carry this hourly flow of traffic in peak hours.

Since the problem is to pump in the maximum traffic at the centres of employment in a limited span of time, the frequency has to be high and the carrying capacity has to be maximum.

The Metropolitan Transport Project (Rlys) have forecast that the mass trips in 1981 should rise to the following figures :

Mass Trips—1981

Calcutta . .	67 lakh
Bombay .	61 lakh
Madras	37 lakh
Delhi .	29 lakh (at 60 per cent Modal Split)

Taking 10 per cent of the trips allotted to public mass transport system, Bombay and Calcutta will have to share the burden of catering to over 5 lakhs trips in every peak hour; Madras and Delhi will account for over two lakh

System Selection

Keeping in view the conditions mentioned above, let us examine how different systems of transportation would satisfy the needs of urban commuters. The table 5 on next page shows salient characteristics of the different systems of transportation

From the traffic projections of peak hour given before it is obvious that Mass Rapid Transit System has to be introduced in the four Cities since surface system Bus and Suburban Railway can make no further penetration in the heart of the city.The room available on the arterial roads leaves no scope for expansion of road transport in the Metropolitan Cities. In Madras, MTP|R has assigned 12,500 trips on arterial roads in peak hours. In Bombay the North-South flow during peak hour is 35000 trips. Eighty to 120 buses ply in each direction during the peak hour on Dadabhai Naroji Road-Mohammed Ali-Dr. Bala Sahib Road.

Mere addition of buses does not go to ease problem of commuter traffic in metropolitan cities. Most of the roads in Indian cities have grown and not been built in a planned manner, particularly in the "walled city". There is hardly any scope for expansion so as to provide exclusive bus lanes. Further for smooth flow of road traffic not only segregation of fast moving traffic from other slower streams of

Table 5

System	Average commercial Speed in Kmph.	Maximum Frequency in Minutes	Average Inter-Station Distances	Peak Hour carrying capacity
1. Tram	10—13 (30 in western countries)	1.5 to 2.8	400 metres	7000 (India)
2 Bus	14	5	300 metres	6000 (India) 9000 (Western Countries)
3 Suburban Railway	33 to 38	3	3 Kms.	60000 (India) 40000 (Western Countries)
4 Mass Rapid Transit System	33	1.5 to 2	1 Km	67000 (Calcutta) 60000 (Western Countries)

traffic is desirable but also intersections and grade separators are essential. The construction of such grade separators, exclusive buslanes, separate cycle tracks is not possible. Hence neither increase in the average speed of buses is possible nor mere addition of more buses to the existing fleet will bring about the desired relief/improvement to the commuter traffic. Even the widest road like Ring Road in Delhi will not permit loading of 4-5 buses per minute because of inter-mix of different types of traffic with varying speed, and frequent intersections and turn abouts

Economics of different Systems

The economy of the overall transportation system is most importantly related to its hourly carrying capacity, as well as speed. The choice of a particular mode of transport on a particular route will depend on the traffic demand, speed, the capacity of the transport and the room available for passage Annual expenditure per Km of each system has been calculated by Dr P. G. Patankar, General Manager, DTC in his book on "Urban Mobility in developing countries". Table 6 above gives the results.

Table 6

Total Yearly Expenditure per Km (Lakh of Rupees)

Passengers flow per hrs.	Underground Rly. 30 Kmph	Overhead Rly. 30 Kmph	Surface Rly. 35 Kmph	Buses 16 Kmph	Trolley buses 20 Kmph
5000	53.79	14.10	6.83	10.30	10 42
10,000	55.81	15 44	8.31	20.60	19.89
15,000	57.83	16.78	9.79	30.90	29 36
20,000	59.84	18.12	11.27	41.20	38.84
25,000	61.86	19 46	12.74	51.50	48 31
30,000	63.88	20.80	14 22	—	—

Buses ply efficiently within short distances where the trips are short and frequent. In Metropolitan cities except Delhi the average trip length for bus ranges between 5 and 7 Km. (Madras 7.2 km. Calcutta 6.7 km., Bombay 5.41 km.), whereas in Delhi the average trip length is 9.8 kms. In Bombay 82.5 per cent of the passengers travel upto 6.4 km. The trip length in Delhi is long because of Urban Sprawl and lack of suburban services. Considering the carrying capacity of the bus system, buses have to play the role of feeder services wherever there is suburban/MRTS.

Role of different modes of Transport

Intraurban Trips merely consist of work trips between home and the Central business district. The main component is the line haul component connecting the residential and the Central Business Districts or down town area. The second component is the trips between different areas of high activity. These two involve operation in a few corridors. The suburban train service is ideal for the first type In the second MRTS has to play its role once the roads are saturated and the pattern of Commuter Traffic requires dispersal of high volume of traffic in a densely populated area. Buses are ideal for trips within low density outer area They should provide for residential collection of commuters and down town distribution from the station heads where density is not high. Long bus routes for line haul are uneconomical.

In metropolitan cities when the traffic demand is below 5,000 passengers per hour, Dr. Patankar is of the opinion that economical development of transport would start with a bus system. Introduction of surface railway should be undertaken after the hourly flow of traffic in peak hour exceeds 6,000

Integration of Fares

Many commuters have to undergo interchange of mode during their trips. To reach the work centre one has often to either take a feeder trip by bus to the rail head or get down from the rail head and travel by bus to destination. Integration of fare is thus essential to bring the services within the means of the average commuter. The fare structure should be such that the combined incidence of rail-bus-fare is within easy reach of commuters. Further rescheduling of the bus services so as to serve as feeder to the MRTS|Suburban rail heads reuired close integration and co-ordination.

So far as Indian metropolitan cities are concerned, the role of the Railways has been confined only to bringing daily commuters from the suburbs to the terminals located in the city. But as MRTS alignments come close to the suburban corridors there is bound to be over-lap and two systems cannot be allowed to compete with each other. Management under one system is a must before integration of fare can be effectively introduced.

Such an organisational change can only be brought about by legislation detailing definite relationship and the respective functions, powers and obligations of the parties including financial matters. In the western countries such integration has already taken place. Transport (London) Act of 1969 empowered Greater London Council with Strategic and financial control of public transport provided by London Transport buses and Underground and by British Railways' l don Suburban Services. In Paris, the Sydicate Transport Parisiens has been supervising and con ling public transport in paris since 1959. The Sy cate has wide operational, financial and planning wers with particular emphasis on matters requ co-ordination. It controls capital investment and valuation of financial contributions from the nati and local governments.

Conclusions

A multidimensional approach is necessary in pl ning of the Transportation System for metropoli cities. Transport plan has to be co-ordinated with la use planning. If the metropolitan cities in India ha to grow in a planned way, decongestion of the densi populated areas in cities with concurrent developm of the suburbs—industrial (multi nuclear) comm cial and economic-is-absolutely essential. The develc ment of the suburbs on the multi-nuclear developme pattern is essential to attract commuters residing the congested area of metropolis as also to provi incentive to potential immigrants to the city to se tle down in the satellite towns. The metropolis do reyuire not only decongestion of population but al decentralisation of economic activities and the dispe sal of population to the suburbs. It also requires redi tribution of population to less densely populated are within the city. In both these functions—suburb Electric Commuter Services and the Mass Rapid Tra sit System with bus feeder services will be playi mutually supplementary role. ☐

Inland Water Transport
Prospects and Problems

M S. Menon

INDIA has a number of important rivers and canals having substantial navigational potential. For centuries past the principal means of communication in the country was river transport and most of the trade centres were situated on water fronts of rivers like the Ganga, the Brahmaputra, the Godavari etc. However, with the development of roads and railways, the Inland Water Transport had to face stiff competition from these modes of transport and coupled with the lack of maintenance of waterways, diversion of water for irrigation purposes etc. the river transport was almost relegated to the background except in regions like Goa and Assam where its natural advantages outweighed other disadvantages.

The estimated total length of riverine waterways in India is more than 14,000 kms. Of these, about 7,800 Kms. is navigable by the country crafts. However, due to draft restrictions navigation by mechanised craft is possible only for about a length 5,200 kms. on major rivers, though, the actual utilisation for navigation by mechanised craft is now to the extent of only about 2,000 kms. The reasons for such low utilisation of the waterways are attributable to the non-maintenance of navigable channels, low cargo offerings etc. The rivers like the Ganga, the Brahmaputra, the Mahanadi, the Narmada, the Godavari, the Krishna and the Tapi as well as the waterways of sunderbans, the creeks in the east and west coasts, however, provide some localised facilities for inland water transport.

Some of the important canals having navigation potential are the Cumbarjua canal in Goa, Buckingham Canal in Andhra Pradesh and Tamil Nadu, West Coast Canal in Kerala, DVC and Krishtopur Canal in West Bengal and Orissa Coast Canal in Orissa. Though the total navigable length of canals is about 4,300 kms., a length of about 500 kms. only is navigable by mechanised vessels. However, navigation by the mechanised crafts is presently done only in a short length.

Problem Areas

The estimates of volume of traffic that flow through these navigable waterways—rivers and canals in different parts of the country are not available. However, the available statistics of the cargo carried by mechanised vessels in some important waterways and by prominent operators during 1976-77 are given in Table.

M.S. Menon is Joint Director, Inland Water Transport Directorate, Ministry of Shipping and Transport

It may be seen from the above that the movement of cargo through IWT has not been very impressive in the past. Though Inland Water Transport is universally recognised as the most suitable economical mode of transport for transporting bulk and semi-finished commodities, because of its very low consumption of energy, low relative cost of operation etc., the pace of growth of this mode of transport has not been upto the expectations for various reasons. One of the main reasons advanced as the disadvantage of inland water transport is the slow movement as compared to rail or road movement. Further IWT services are possible only where well-maintained navigable waterways exist i.e. it can operate on an economic basis only where the origin and destination of traffic are located on or near the water front. It does not offer the facilities of door to door delivery like road transport except in places like Cochin where materials are transported from the port to the factory which is also located on the river front and vice versa. Apart from these, the necessity for a bigger investment by the IWT entrepreneurs and the difficulties in transhipments, loading and unloading time etc. are also major disadvantages for the inland water transport.

These reasons apart, the main causes for the slow growth of IWT are the following :—

(i) The stiff competition meted out by the Railways since they charge concessional freight rates for bulk commodities which is much below their total cost of transportation though they are able to meet this loss by cross subsidisation from high rated commodities. IWT operators could not afford to quote in this way for bulk movements.

(ii) Most of the waterways do not have requisite infra-structure facilities and for want of modern research and design back, the IWT operation is based on outmoded technology at low levels of efficiency and is thus not able to compete with railways and road transport which are based on modern technology.

Table 1

State/Organisation	Originating traffic (in million tonnes)
(a) Goa	4.2
(b) CIWTC	0.2
(c) Gujarat	0.5
(d) Maharashtra	0.4

(iii) **Being small entrepreneurs, most of the IWT operators do not have enough finance to improve their operations.**

Since independence, Government of India have been trying to improve this mode of transport. Some progress has been achieved in the development of IWT during the various plans. In fact, a total expenditure of about Rs. 273 million has been incurred in various Central and Centrally Sponsored Schemes for development of IWT upto 31-3-79.

Constitutional Position and Organisational set-up

As per the Constitution, the direct responsibility of the Central Government is only in respect of inland waterways which are declared as National Waterways. The development of water transport on other waterways is the responsibility of the respective State Government. So far no waterway has been declared as National Waterway though preliminary works are being taken up for declaring some of the waterways as National Waterways.

The Inland Water Transport being basically a State subject, it can be developed only with the earnest effort and co-operation of the State Government. In order to ensure closest co-ordination between the Centre and the State Governments for tackling the various issues regarding development of IWT, a two tier organisation has been set up at the Centre-(i) The Central Inland Water Transport Board with the Union Minister for Shipping & Transport as Chairman and the Minister-in-Charge of IWT in the concerned States as Members. This Board would lay down broad policies and guidelines for development of IWT in the country, (ii) The Implementing and Co-ordinating Committee under the Chairmanship of the Union Transport Secretary with the representatives of the concerned departments of Central and State Government as Members. This Committee has been charged with the task of reviewing and coordinating the activities of the various State Governments with regard to the implementation of sanctioned schemes and to formulate new schemes for development.

The development of inland water transport is guided by the Inland Water Transport Directorate of the Ministry of Shipping and Transport. Scheme like hydrographic surveys, techno-economic feasibility studies on important waterways, providing terminal facilities, acquisition of craft etc. are being implemented through the Central and State agencies. On the State side IWT Directorates/cells have been set up for implementing their schemes. The various Central Schemes under consideration of Central Government will mainly be schemes for development of waterways that may be declared as National Waterways, research and development schemes etc. as well as the schemes for Central Inland Water Transport Corporation, a public sector undertaking under the Ministry of Shipping & Transport. The Central Government also provide loan assistance to States for implementing schemes sponsored by the Central Government (Centrally Sponsored Schemes). While the Central schemes will be initiated by the Central Government and executed through suitable agencies, Centrally Sponsored Schemes will be executed by the State Government for which Central loan assistance would be made available to the States to the extent of 50 per cent cost and the remaining would be met by the State Governments.

Developmental Activities and Prospects

The important Central Schemes under consideration of the Government of India for development of I.V are :—

(i) *Government's Scheme for introduction of land Water Transport between Haldia Farakka on the Hooghly-Bhagirathi system*

An excellent channel is available for navigat throughout the year in the waterway after the signi of agreement on sharing of waters of the river Gan between India and Bangladesh. Sufficient cargo offe ings are expected since large quantity of stone boulde already move from near Farakka to Calcutta and gen ral cargo and manufactured items are likely to b available from Haldia and Calcutta for retu movement. The proposal envisages building up of in frastructure facilities including shore and handlir facilities, river maintenance etc. For carrying out comprehensive study for this reach, the studies hav already been entrusted to a consultant.

(ii) *Hydrographic survey and river conservanc in important waterways*

The basic data required to study the possibility o introduction of navigation in inland waterways is th hydrographic survey. The data would enable prop investment decision to be taken with regard to rive conservancy works for making and maintaining a nav gable waterway. Proposals are under consideration fo carrying out hydrographic surveys in important wate ways of the country. The surveys with regard to th waterways in the Sunderbans area have already bee entrusted to the Minor Ports Survey Organisatic of the Ministry of Shipping and Transport.

(iii) *Inland Vessels Development Fund*

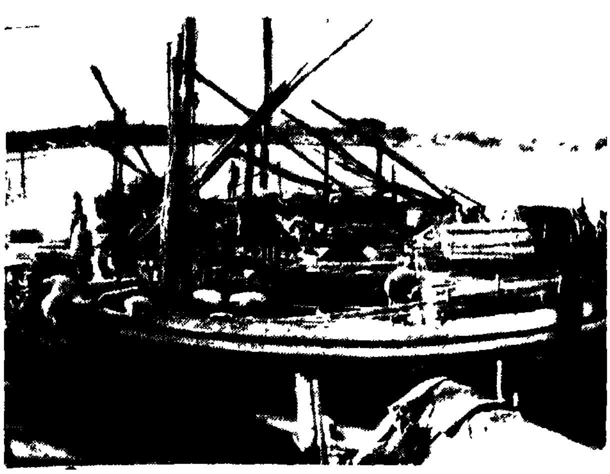
This proposal envisages providing assistance to IW entrepreneurs to enable them to acquire moderni craft and to mechanise their existing craft. As alrea indicated, one of the reasons for the slow growth IWT is that the IWT entrepreneurs do not have suf cient finance to introduce modern concepts of operati for speedy transportation. To enable such entreprene for modernising their craft, a proposal is under con deration of the Government of India to provide inter subsidy to loans to be advanced by the Finan Institutions to IWT entrepreneurs.

(iv) *River Services in the Ganga*

Government of India are already operating throu their Regional Office of the IWT Directorate at Pat experimental services on Ganga between Patna a Chunar/Ghazipur as also LCT service between C gong-Karagola for transportation of vehicular a other traffic. A passenger service between Colgo and Tintanga is also being operated by this Regior Office.

(v) *National Waterways*

The declaration of important waterways as Natio Waterways is under consideration for development IWT in important rivers/canal systems in the countr Some of the important criterion recommended by t Comittee on National Waterways, 1974 for selecti National Waterways are that it should be an inter-St Waterways, it should have an assured and continuo navigable river channel of a minimum depth of 5 f (1.52 metres) and width of 150 feet (45.72 metre and traffic of not less than 2.5 lakh tonnes annua by mechanised vessels, it should pass through strate regions, it should connect places not served by oth



Around 7800 kms of riverine waterways are navigable by country crafts

means of communication and it should satisfy socio-economic or commercial considerations.

To study the various aspects of river improvement, navigation, traffic etc. for the waterways, proposals are under consideration for entrusting hydrographic surveys and preliminary techno-economic feasibility studies to consultants.

The important waterways to be considered as National Waterways are the Brahmaputra, the Ganga, the Sunderbans, the Mahanadi, the Narmada, the Tapi, the Godavari, the Krishna, the Mandovi and the Cumbarjua Canal-Zuari Waterway and the West Coast Canal-1 between Alleppey and Cochin.

(vi) *Schemes of C.I.W.T.C.*

The Central Inland Water Transport Corporation (a Govt. of India Undertaking) is entrusted with the operation of river services between Calcutta and Gauhati/Cachar as also between Calcutta and Bangladesh. They also operate river-cum-road services between Calcutta and Tripura. These schemes of CIWTC include acquisition of vessels for the river services, capital repairs to the existing vessels, provision of infrastructure facilities etc. for the river services, modernising the Rajabagan Dockyard for construction and repair of inland water transport vessels etc.

Some of the important schemes sponsored by the Central Government as loan assistance to the States are the following :—

(i) Improvement to IWT facilities in the 20 Km. long Champakara Canal for the Industrial region near Cochin (Kerala) by widening and deepening the canal.

(ii) Construction of one fixed jetty at Howrah and one floating jetty at Calcutta and acquisition of ferry vessels for operating passenger ferry service on the river Hooghly (West Bengal)

(iii) Providing a slipway 270 metre long and 30 metre wide for repair facilities to inland vessels in Gauhati (Assam).

Enactments

For regulating the operation of mechanised vessels as also the operation of ferry services in the country, necessary enactments have been carried out by the Central Government in association with the State Governments. The Inland Steam Vessels Act, 1917 has been amended to make it upto date and effective. The amended Act known as the Inland Act, 1917 provide for insurance to passengers and property on board the inland vessels against third party risks. Necessary rules entitled Inland Vessels Third Party Insurance Rules 1978 have also been framed and brought into force with effect from 1-1-1979. A Model Ferries' Bill has been prepared by the Government of India keeping in view of the loss of human life as a result of accidents to ferry vessels. These rules, besides, making registration of ferry vessels including country boats compulsory, provide for insurance to passenger against third party. Copies of this Model Act have been forwarded to the State Governments for adoption by placing it on their respective Statute Books.

Future Programmes

For the development of I.W.T. the waterways having navigation potential have to be maintained with enough draught and width by taking necessary measures including dredging. However, the basic data pertaining to each of the waterway in the country is not readily available to assess the requirements and decide the priorities. It is, therefore, proposed to have a system of data collection which would provide minimum necessary information required to prepare schemes for development of I.W.T. in the waterway.

A proposal is under consideration of the Government of India to establish Regional Directorates for enabling close co-operation between Central and State Governments for formulation and implementation of I.W.T. projects as well as to identify bottlenecks in the implementation of the schemes and development of I.W.T. Monitoring of the implementation of schemes would also be done by these Directorates. These Directorates could also be entrusted with the task of training personnel for dredging and other conservancy works etc.

Ample scope exists in the field of I.W.T. for carrying out research on schemes for river improvements, navigation, vessel design etc. to suit to the peculiar waterway conditions of this country. A proposal for establishment of a Central Research Institute exclusively to deal with I.W.T. problems and original research taking into account the existing facilities in the States is under consideration of the Government of India.

Foreign technical-co-operation including UNDP assistance has been sought for studying various aspects in the fields of river improvements, navigation, management, traffic problems, design of vessels etc. on a few selected waterways. The I.W.T. Directorate being a corporate member of the International Association of Navigation Congress (PIANC) has also the advantage of getting the technical know how available with the association.

To conclude, I.W.T. has a bright future if properly developed to supplement the overland transport system as in Bombay and Calcutta, to connect the hinterlands not accessible by other modes of transport as in the North Eastern Region and to provide a boost to tourism in the country. The policies and programmes now being initiated by Government of India in close co-ordination with the State Governments, it is expected that this economic mode of transport would gain considerable momentum □



SHIPPING IN INDIA

Dr. Raghunath Singh

Shipping Corporation which was formed with only 19 ships in 1961, has grown, today, to operate 141 ships to extend overseas and coastal shipping services. The Chairman of Shipping Corporation, while enumerating the strides of Indian shipping development specially emphasizes the need to improve and add more fleet to conserve the much needed foreign exchange.

THE HISTORY of Indian Shipping starts with the name of Sciendia Steam Navigation Company, when they purchased a second-hand vessel and started the shipping company Shipping was not making progress as overseas and coastal shipping were in the hands of foreigners. Shri S. N Haji moved a bill in the Central Assembly for the reservation of the Coastal trade for Indian bottoms only. This bill was piloted and passed by the Central Assembly. Thus Indian Shipping got some foothold as far as Coastal shipping was concerned.

After independence, Government considered that the private sector was not able to cope with the situation and the drainage of foreign exchange was too high. Therefore, Eastern and Western Shipping Corporations were established. Both the Corporations were later merged in 1961, and the Shipping Corporation of India came into existence In 1961, the SCI had 19 ships with Gross Registered Tonnage (GRT) of 1,38,598 or Dead Weight Tonnage (DWT) of 1,92,319 Tonnes. At present the Shipping Corporation has 141 ships of 28,26,526 GRT or 47,54,051 DWT, which includes Bulk Carriers, Oil Tankers, Combination Carriers, Crude Carriers, Product Carriers, Colliers, Passenger-cum-Cargo, Timber Carriers, Cattle Carrier, Very Large Crude Carriers (VLCCs) etc.

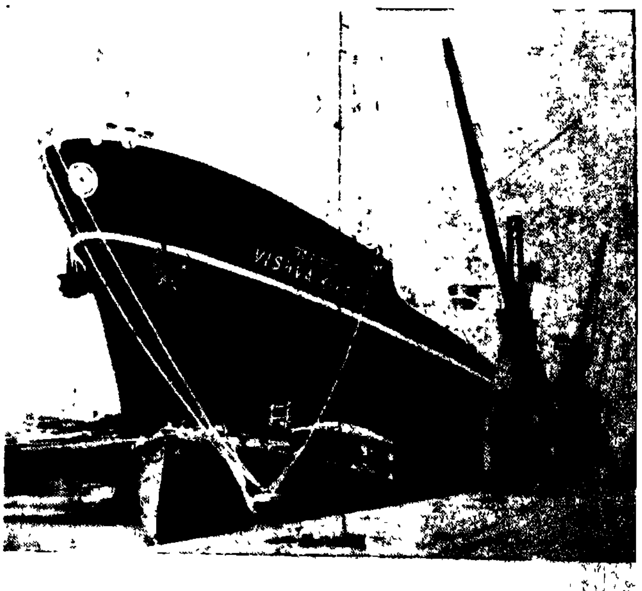
The Shipping services are divided into two groups : Overseas shipping, and Costal Shipping Service. Coastal Shipping consists of dry cargo, oil tanker, passenger-cum-vessels. SCI has also overseas shipping services which consist of cargo liners, bulk carriers, Ore/oil carriers, tankers and passenger-cum-cargo carriers. Indian tonnage for coastal services is 4,07,972 GRT or 6,10,470 DWT with 75 ships and for overseas services 51,92,286 GRT or 86,31,989 DWT with 382 ships. These figures are for both public and private sector shipping companies. India, thus, at present has total 382 ships with 56,00,258 GRT or 92,42,459 DWT.

In India, 63 Shipping companies are operating. Among them, two are in the Public Sector. They are : the Shipping Corporation of India and Mogul Line Ltd. The rest of the companies are in private sector, out of which 12 belong to big houses of India and remaining held by small shipping companies. Thus, the percentage of SCI tonnage to Indian tonnage is 45.92 per cent to world tonnage. At present Indian ships carry only 27 per cent of its trade and the rest is carried by foreign flag ships. It is difficult to give actual investment in the shipping industry by the 63 shipping companies. Roughly speaking SCI's investment is about Rs 700 crore and about 117 crore by private shipping companies.

India is passing through a critical period in shipping. Shipping all over the world is in troubled waters at present as can be seen from the fact that about 4 crore DWT tonnage is laid up. India is fortunate that not a single ship is laid up. Because of the efficiency at all levels, the percentage of accidents is only one per cent to world accidents

The world fleet consists of 69,020 ships with GRT 40,60,01,979 or 67,04,18,751 DWT as compared to Indian fleet of only 591 ships with 57,59,224 GRT or 92,37,927 DWT. Thus, there is substantial scope for the growth of Indian fleet If we want to carry our cargoes in Indian bottoms, we have to replan our shipping policy. The world ratio for carrying cargoes as adopted by America and other developed countries is 50 : 50. If we accept this ratio, India can carry 23 per cent more, presently we carry only 27 per cent of our cargoes, and expand its fleet and trade.

India, being a progressive country, it is hoped that she can invest more money in shipping so as not only to stop draining out of foreign exchange but also to earn more foreign exchange



Dr. Raghunath Singh is the Chairman of the Shipping Corporaion India.

Air transport in India has registered good strides of growth during the last two decades. Keeping in view the future needs of air traffic, Sixth Five Year Plan has allocated sufficient funds to develop the infrastructural facilities provided by the Civil Aviation Department and International Airports Authority of India. Only six new points have been added in the last 25 years whereas many more points should have been connected by air, keeping in view the industrial or other development over the years, the author says.

Civil Aviation in India

Air Marshal J. Zaheer (Retd.)

A LONG term perspective plan in respect of the Department of Civil Aviation integrated with the anticipated growth of civil aviation in the future is yet to be formulated. t will be pertinent to refer primarily to the prospects nd goals of the Department in relation to a relatively hort time frame, i.e. till the end of the Sixth Plan eriod and two to three years beyond.

For various reasons the infrastructure that this De- artment is required to provide for civil aviation has ot kept pace with the growth of scheduled aviation perations, or for that matter with non-scheduled and eneral aviation in which there has been hardly any rowth at all.

Augmentation of Infrastructure

Over the last ten years or so, the domestic national arrier has introduced higher capacity relatively ad- anced aircraft in the shape of the Boeing 737 and he Airbus. There have been quantum increases in in- rnational traffic, in terms of numbers and perform- nce of aircraft, placing much greater demands on oute nevigation, air traffic control and landing acilities.

The use of larger more sophisticated aircraft by opera- ors has brought about demands on improvement of he Department's capability in regard to ground safety ervices, the airworthiness of aircraft and the profi- iency standards of flight deck and cabin crew.

Air Marshal J. Zaheer is retired Director General of Civil Aviation.

The International Airports Authority (India) has major plans for augmenting the ground facilities at the four international airports In so far as the immediate goals of the Department of Civil Aviation are concerned, these are :—

(a) Develop several domestic airports to cater to the needs of the Airbus and the Boeing 737 aircraft.

(b) Augment and/or replace ground safety services to cater to the enhanced needs in respect of crash fire tenders, approach and runway lighting, VASI, etc.

(c) Augment and replace route navigation equipment, communications and landing aids to standards advised by the International Civil Aviation Organisation.

(d) Strengthen airworthiness and flight examination standards to cater to modern aircraft and advanced operational techniques.

Resource Availability

The Sixth Five Year Plan period will see a major growth in the facilities that the Civil Aviation Department is required to provide. The Planning Commission has allocated a capital outlay of Rs. 150 crore for this department in the Sixth Five Year Plan. Part of this would spill over into the Seventh Plan period. This relatively large capital outlay is in recognition of the serious deficiencies that have accumulated over the past and flow primarily from the more urgent recommendations of the Civil Aviation Review Committee formed


Returning on our fast, non-stop flights can be a delightful treat. You get more time in London, or arrive home earlier. Twice a week from London to Delhi, and then to Bombay. And twice a week from London direct to Bombay. Delectable food, super service. Maybe you'll wish it would go on a little longer.
AIR-INDIA
something good going for you.
Catch my non-stop London-Return. Four times a week.
AI.3530A

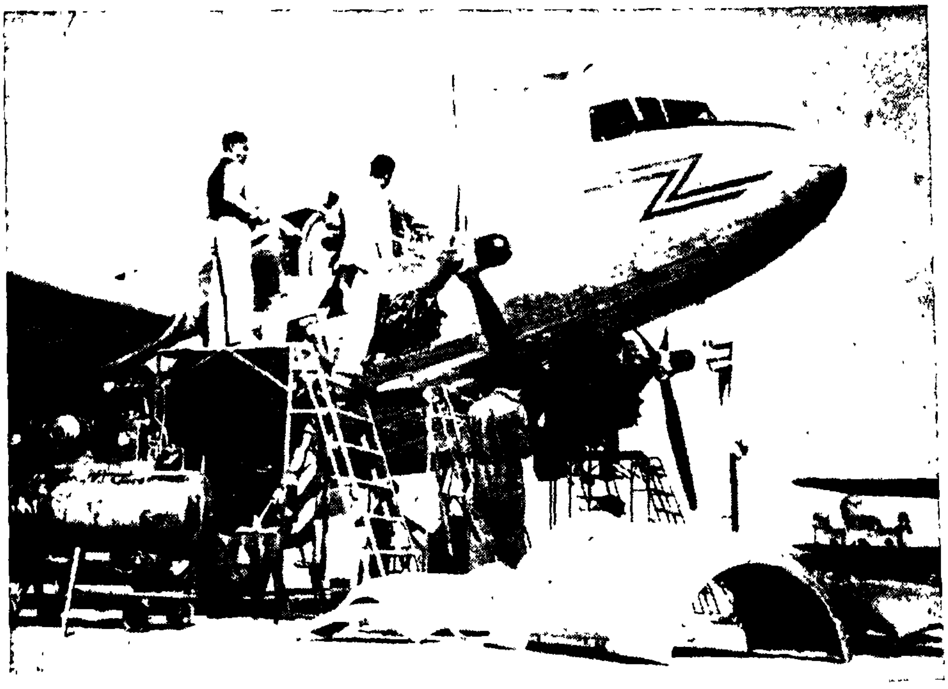
under the chairmanship of Mr. J. R. D. Tata and its Report submitted in December, 1975. Broad allocation of these resources is as follows :—

(a) Development of Aerodromes (Capital Works) . . . Rs. 42 crs.
(b) Route navigation, landing and aeronautical communication facilities . . . Rs. 72.50 crs
(c) Ground safety services . Rs. 26 crs.
(d) Miscellaneous capital schemes Rs. 9.50 crs.

The outlay of 150 crore is more than five times the outlay of the Fifth Plan and 83 per cent more than the total expenditure of all previous Five Year Plans put together. Even after allowing for the effects of inflation, in real money terms, the Sixth Plan schemes amount to a quantum jump in the rate at which new schemes and facilities are required to be implemented. It is noteworthy that the full implementation of all necessary. While these are being pursued and are essential to successful implementation of our schemes, the need has also been recognised for greater autonomy in powers both financial and administrative for the Head of Department.

A thorough review is required for our training facilities and standards. These will also need to be implemented in the short term. One of our goals, and an important one, is to establish a Central Flying Establishment so that we can standardise and improve the quality of training of such of the pilots as would be selected from Flying Clubs for ultimate introduction into the Central Training Establishment of Indian Airlines.

To a very considerable extent the ultimate safety and efficiency of air operations is dependent on the standards of the operator's operational and maintenance organisation—its pilots, engineers and technicians. This



To a great extent the safety and efficiency of airoperations depend on the standards of pilots, engineers and technicians

the assessed needs of augmentation and modernisation were assessed at Rs. 240 crore. Pegging the Sixth Plan resources to Rs. 150 crore was in recognition of the difficulties in finding more resources for this Department and also the capacity of the Department to absorb a bigger dose of funds. It has been recognised that even the utilisation of the existing allocation of Rs. 150 crore would require a tremendous effort on the part of the Department and connected agencies in the planning and execution of the identified schemes.

Organisational Changes

It has been appreciated and, in fact, it was also a recommendation of the Civil Aviation Department Review Committee that certain organisational changes and staff augmentations within the Department would be Department has monitoring and regulatory responsibilities in both these areas. A fulfledged Directorate of Flight Examination within the Department is urgent and inescapable and is planned to be implemented in the short term. In regard to airworthiness of aircraft, the Department is presently faced with a serious depletion in the availability of experienced Aeronautical Inspectors to cope with the growth in both the numbers and sophistication of current aircraft. The rectification of this situation is one of the important goals of this Department.

Third Level Operations

Prospects for the growth of Third Level operations in the country remain somewhat cloudy. It is a surprising fact that since 1953, when domestic airlines

served 55 points, only 6 new points have been added in the last 25 years. In most dispassionate assessments, it has been recognised that adequate socio-economic justifications exist to airlink many more smaller cities and towns that have seen industrial or other development over the years. It has been estimated that for less than the cost of single Boeing 747, it would be possible to link 50 new city|industrial centres inclusive of the cost of aircraft and infrastructure. Notwithstanding the basic justifications for growth of Third Level operations, the rapidly increasing difficulties in regard to the costs and availability of the traditional aviation fuels are likely to have an increasing impact on the assessments of the viability of such operations. Different countries would be reaching different conclusions on this question dependent on their environmental considerations and priorities. In our context, a distinct likelihood exists that due to the energy crisis, the growth of Third Level would be retarded and at least initially restricted to points on considerations primarily of their inaccessibility and strategic importance.

Revenue Earning

In recent years, the Civil Aviation Department has begun to earn more revenue than the revenue expenditure. Even in relation to the capital expenditure, after deducting depreciation charges and interest on capital, it is found that the earnings are more than the outgo. This is an important development in so far as it would meet one of the constant difficulties faced by the Department in the allocation of resources. The Department has identified areas where revenue earnings can be enhanced. There is, therefore, the likelihood that in future this Department would be self-sustained, with better prospects of ready availability of funds for its developmental requirements.

Conclusions

The prospects for the Civil Aviation Department over the next 5 years or so is a period primarily of consolidation so that it can provide an infrastructure and facilities adequate to support the quantum and quality of civil aviation operations as they exist today. Our plans and resources do not significantly cater for what may be the further growth of civil air operations in the years ahead. If the latter is to be catered for, there would be a need not only for additional funds but also for sizeable growth of the organisation and establishment of the Department so that it can absorb the additional resources that may become available. □

Planning For Transport (Continued from page 12)

size and smaller towns so that growth of metropolitan cities is checked and, if possible, reversed. There should be a diversion of resources in favour of medium sized and smaller towns and away from metropolitan cities. As regards transport in metropolitan and large cities, the search should be for low-cost solutions, rather than underground railways, rapid transit and other mass transportation facilities. Instead accent should be on encouraging bicycles and other slow moving vehicles and entire roads, by the shortest and most direct routes, should be exclusively earmarked for bicycles (and pedestrians) and thereby make it safe for bicycles to use the roads and encourage people to take to bicycles (already Delhi has over a million bicycles). Coastal Shipping and Inland Water Transport should be revived and necessary steps should be taken including allocation of additional investment resources, to enable them to play a greater role in the transportation system of the country, for which they have the potential. Container facilities, port facilities, air cargo facilities and shipping must be developed with a view to realise their potential developmental role to boost our exports—we need increased exports to pay for oil import and other import needs for a higher rate of growth of economy. A four-fold increase in our exports is needed merely to catch up with our past performance. Air transport has also to play its part, greater than hitherto, in developing towns which will, in turn bring rich dividends to the country. As for railways, the time has come to take a second look at it and redefine its role. Just as there is a season for pruning roses so that they will blossom once again, it is high time the operations of our railways are pruned. Railways should be allowed to concentrate on bulk traffic carried over long distances in full rakes on a point-to-point basis in a closed circuit, (with empty return, without having to undo and redo trains) for which it would be necessary to set up bulk depots at destination points. Railways should shed all other freight traffic and in order that they do not suffer financially, they should be allowed to recover full costs of carrying the bulk traffic in an efficient manner by rationalising their freight rates. Similarly in passenger traffic too, railways should concentrate on long distance mail and express trains and shed all other traffic, gradually, if necessary, by discontinuing their stopping trains. The long distance mail/express passengers today constitute a very small part of the total number of passengers carried by non-suburban railways. Similarly railways should be allowed to close down most of their railway stations (4|5th of them perhaps) for booking of passengers and goods and instead, if necessary, allowed to own and use road transport vehicles to provide the service in a transitional period with a view to avoiding public hue and cry for the services discontinued. The railways should also be allowed to close down uneconomic railway lines|sections except to through traffic. Finally they should develop 'piggy-back' service as a measure of road-rail partnership in which both will benefit. If this 'pruning' of railways is implemented, everyone would be better of ; railways would provide superior service, railways' finances would improve greatly, they would be able to generate enough resources not only to provide adequately for renewals and replacements but also perhaps reduce their dependence on general revenues for their development outlays, the exchequer will be relieved of the burden which the railways have increasingly become on it recently, turn round time of wagons would be reduced significantly (to half the present figure), the long distance passengers will get better service and dependable and speedy delivery of goods. All this requires a change in mental attitudes and established practices, and adopting newer, and perhaps computerised methods of operation. Who will do the pruning operation on the railways, that is the question. □

BOOKS BOOKS BOOKS

Transport Management

Road Transport Management : Systems and Procedure *by B. V. Kallanparampil and S. P. Manchanda, Himalaya Publishing House, Bombay, pp.* 120 *Price Rs.* 30.

TRANSPORT plays a crucial role in all developing economies specailly in a country like India primarily for extension of market, transportation of raw materials and finished goods, opening up of remote areas and bringing about the advantage of economic growth to rural and other handicapped regions. During recent years its significance is increasing in India which is evident from the fact that the share of road transport in goods traffic in billion ton Kms rose from 28 per cent in 1960-61 to 33 per cent in 1976-77 while the passenger traffic in billion passenger Kms. rose from 42 per cent to 61 per cent During the same period the share of railways had declined for these two categories from 72 per cent to 67 per cent and from 58 per cent to 39 per cent respectively Recognising this trend, the Draft plan 1978-83 has assigned a pivotal role to road development programmes for which a provision of Rs. 800 crore, which is about about four times the total outlay during 1974—78, has been made. Consequently, several organisational and managerial problems will arise which will have to be tackled appropriately The study prepared by B. V. Kallanparampil and S P Manchanda who are established experts on transport management fulfils this basic need.

The book is primarily a non-technical publication giving in 13 chapters crucial information and guidelines concerning subjects like ownership and organisation, basic documents, booking, loading, crossing and transhipments, hiring of trucks, delivery, financial management, planning, budgeting, inspection, storage and fleet management The six appendices giving important check-lists are on (1) efficient transport system (2) schedule of job responsibilities, (3) classification of goods, (4) goods haulage contract, (5) contract on carriage and (6) goods forwarding note. A new entrepreneur desirous of achieving operational efficiency requires consultancy advice on these matters which he could readily obtain from this study.

The book begins by highlighting the importance of road transportation in developmental process and gradually introduces the more complicated aspects of the problem. The chapter on ownership and organisation highlights the different forms of ownership that will gradually evolve in this industry which the entrepreneur has to know. In order to make the network efficient and establish a better coordinated arrangement, certain terms and basic documents have to be evolved which are well described in the chapter on the subject The chapter on financial management deals with the modus operandi of operating accounts while that on planning and budgeting provides the basic requirements of a sales budget which will contribute towards the profitability of the industry. The chapter on inspection provides the general guidelines and a series of check-lists which will ensure smooth and efficient functioning of the organisation. The book concludes most appropriately with a chapter on fleet management, discussing the economics and technical operational ties without which optimal utilisation of resources in achieving the desired objectives would have remained a far-off cry.

Such a book will be very useful for research scholars, road operators and policy makers as it provides essential guidelines in regard to the various critical problems confronting this expending industry in India.

Ganga Madhava Rao

Management

Materials Management By *Vasant Ambade. Published by Harshad Prakashan,* 1164/10, *Shivajinagar, Poona. First Published* 1979. *Pages* 123. *Price Rs.* 30.00.

THIS is a brief introduction to the different aspects of the science and art of materials management. A reading of this book shows that it is meant primarily for a layman as all the chapters contained therein are written in a non-technical way.

After explaining the importance of materials management, the author goes on to the aspects like purchases, sub-contracting, stores, inventory, standardisation and value-analysis. All these topics are, however, treated in a perfunctory manner but illustrations have been provided at some places to make the description better understandable.

It is true that as a profit centre, the better handling of materials and stores is conducive to reduction in cost and the optimal use of inputs. It also helps in the forecasting of price fluctuations and knowing about the availability of raw materials. The author rightly points out that the use of latest techniques in functions of purchases, stores, inventory control and so on, cannot by itself guarantee economies and lower cost. However, the techniques do improve the competence and the overall efficiency of the materials management function as a whole.

The chapters on purchase management and stores function have been written elaborately but the one on value-analysis is too sketchy to make an impact about the concept itself.

Navin Chandra Joshi

Human Capital

Human Capital Formation and its utilisation *by Dr. Autar S. Dhesi, Sterling Publishers Pvt. Ltd., New Delhi, Rs* 100, *Pages* 291

THE book under review purports to be an-empirical study of the nature, process and problems of human capital formation and its utilization Primarily based on a PhD thesis of the University of Birmingham, U K, its direct relevance to Indian conditions may be viewed in the context of the role of human capital to our economic development alongside the conceptual and empirical apparati that are being utilised by western economists for highlighting the policy implications for the effective utilization of our vast human resources.

In some respects the appearance of the book is timely in so far as it adds to the limited literature on the subject available for consultation by the researchers. However, the author's direct involvement with Indian conditions is limited to two chapters (ix & xii). The two aspects briefly dealt with by him are education and health, both bristling with problems of development and often presented before the public through several conflicting viewpoints of foreign scholars. Fortunately, the author has not overtly championed any of them. A distinct Indian viewpoint is no doubt, yet to emerge, leave alone empirical methods suited to the Indian conditions. The remaining ten chapters of the book are substantially taken up with such topics as the definitions of human capital and their impication for ecomic analysis, the role of human capital in economic growth and various methods of measurement.

The author has made a useful effort in chapter III, wherein the various methods of measuring human capital have been examined, particularly the relationship between productivity, human capital intensity (HCI) and the rate of change of the latter between various stages of development. For this purpose he uses an indicator for HCI developed on the basis of high level manpower share in the labour force. It would appear that the treatment of the role of human capital in the application of new technology and the analysis of the relationship between foreign participation in production and skill distribution are based on certain well-known premises. In otherwords the argument is that with the inflow of external resources in the form of physical capital and know-how there could be a marked improvement in resource development.

Chapter VI on 'Models of foreign direct investment' embodies the above viewpoint and is followed by two more chapters mainly emphasising on human capital formation through education and some aspects of educational planning. Chapter X deals with export performance in R & D intensive industries and efficient utilisation of high level manpower in advanced countries. This is somewhat illustrative of the benefits that India can derive by folowing the lines of policies advocated by the UN and several important specialists in economic development who had in earlier years stressed on capital intensity too much and too long, and yet, have happily resorted to the concept of human capital now as a compromise on ideological grounds. The problems of measurement however, continue to be none too easy to be convncing to all

The macro-economic perspectives underlying the treatment are indeed, broad and quite in keeping with the current levels of theorising and pragmatism embroidered with econometrics. However, the alternative models and approaches to the subject matter have not received any degree of consideration. The empirical exercises are at best insightful exercises but somewhat too narrow to be of specific content or utility for application to India. A revised version with a statement of approaches and policies aimed at, alongside a separate part with illustrative exercises of measurement with special reference to India, might better serve to focus greater interest among Indian reader than what the book can do in its present shape. The drawback of a cumbersom chapter division and too high a price stand in the way of assuring receptivity by researchers which the subject matter, as such, justly deserves in the context of our own economic planning that has veered towards it with kaleidoscopic changes in recent years.

B.N. Nair.

Licensed U(D)-52 to post without prepayment at Civil Lines Post Office, Del

DURING INTERNATIONAL YEAR OF THE CHILD

IDEAL GIFT FOR THE CHILDREN

OFFER THEM A SET OF BEAUTIFUL BOOKS

Books Produced During International Year of the Child

ENGLISH

—Children's Mahabharata by Mathuram Bhoothalingam (The great epic Mahabharata retold for children)	Rs 6 50
—Adventure of a Spacecraft by Mohan Sundara Rajan (A science fiction for children)	Rs 10 00
—Things of Beauty—A Look at Our Heritage by Vidya Dehejia (A look at India's heritage of handicrafts and ancient works of art)	Rs 12 50
—To Far-Off Lands Long Ago by Krishna Chaitanya (Two stories based on Buddhist Jataka tales)	Rs. 8 00

HINDI

—Tendua Aur Cheeta by Ramesh Bedi (Life and habits of the leopard and the hunting leopard)	Rs 8 00
—Parvat Devta by Radhey Shyam Sharma (A collection of eleven short stories of ancient times)	Rs. 5 00
Shri Krishna Katha by Sita Ram Chaturvedi (The story of Lord Krishna)	Rs 8 00
Ashi Jeemikare—Rajasthan Ki Lok Kathaen by Bimla Mehta (Fourteen folk-tales from Rajasthan)	7 50
—Pahelian by Surya Narain Saxena (A collection of riddles in Hindi)	Rs 7 50
—Kaun Jeeta Kaun Hara by Krishna Chaitanya (Two stories based on Buddhist Jataka tales)	Rs 6 00
—Bal Mahabharata by Mathuram Bhoothalingam (The great epic Mahabharata retold for children)	Rs 7 50
Vishva Ki Shreshth Lok Kathaen by Himanshu Joshi (Contains interesting stories of different countries of the world including India)	Rs 7.50

BENGALI

—Chha Jane Mile by Ashapurna Devi (A collection of stories)	Rs 9.00

URDU

—Pahelian by S. Hussain and N.K. Vikram (A collection of riddles in Urdu)	Rs. 8 00

Other Children Books in English

—Children's Ramayana (Revised) by Mathuram Bhoothalingam		Rs. 7 50
—Peacock—Our National Bird by Ajit Mukherjee		Rs 6 00
—The Story of Jawaharlal Nehru by S D Sawant and S D. Badalkar		Rs 3 50
—Children's History of India (Reprint) by Sheila Dhar		Rs 10.00
This India by Sheila Dhar		Rs. 10 00
—India Yours & Mine by Kamala S. Dongerkerry		Rs 6 00
—Our Tribal Children by Dr. S S Shashi	Paperback Library edition	Rs 17 00 Rs. 20 00
Our Freedom Movement by S D. Sawant		Rs 3 50
—Tiger by Zafar Futehally		Rs 5 00
Indian Elephant by M Krishnan		Rs 5 00
—Our Birds (Reprint) by R P N Sinha		Rs 6 00
—Our Trees (Reprint) by R.P.N. Sinha		Rs 8 00

POST FREE SUPPLY

Books worth Rs 10 00 or more will be sent by Registered Post/V P P.

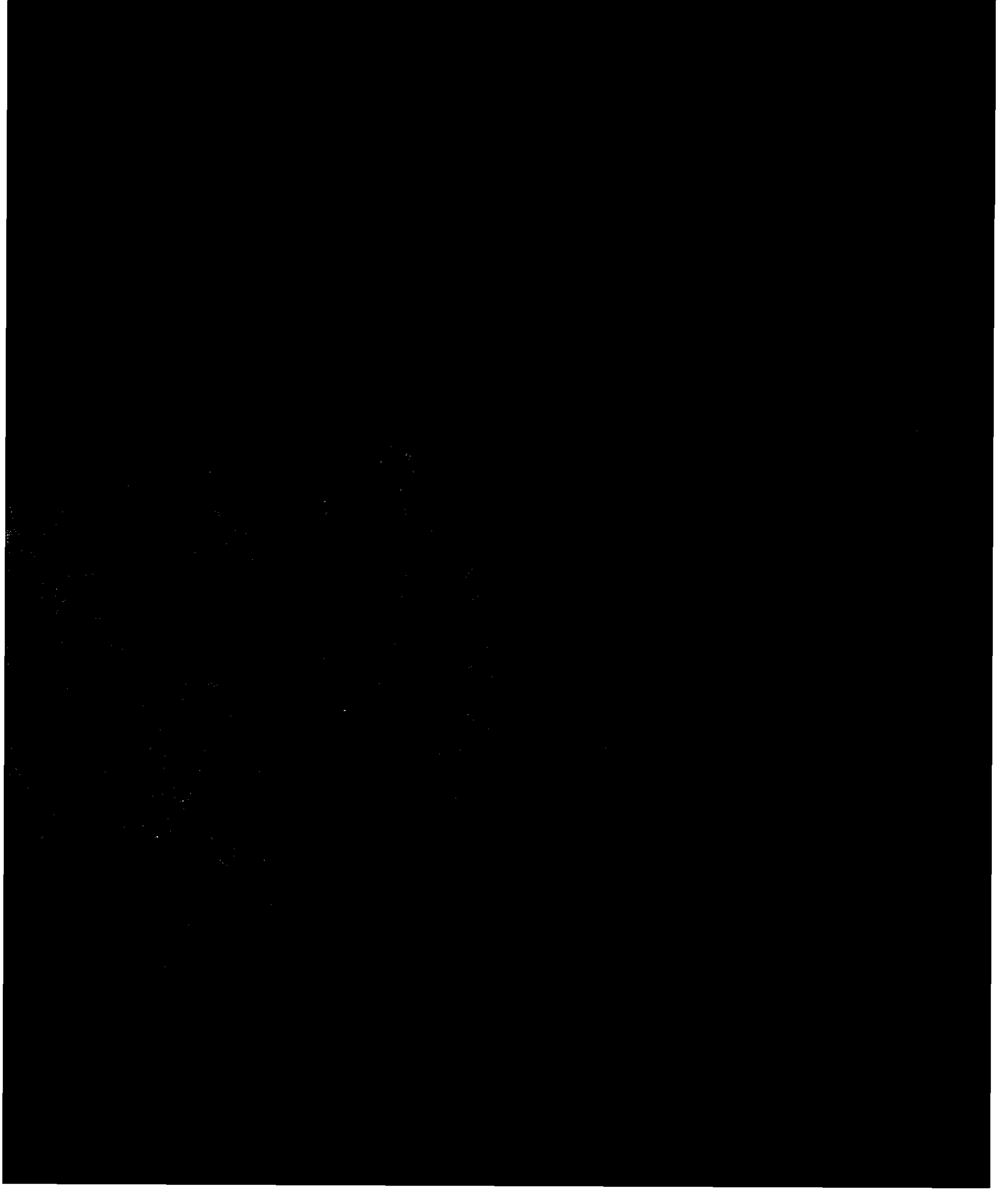
RUSH YOUR ORDER TO :

Business Manager
Sales Emporium
PUBLICATIONS DIVISION

NEW DELHI-110 001	(i) Patiala House (ii) Super Bazar (2nd Floor) Connaught Circus.
BOMBAY-400 038	Commerce House (2nd Floor) Currimbhoy Road, Ballard Pier
CALCUTTA-700 069	: 8 Esplanade East
MADRAS-600 006	. Shastri Bhavan, 35 Haddows Road.
PATNA-800 004	: Bihar State Co-operative Bank Building, Ashoka Rajpath
TRIVANDRUM-695 001	: Near Govt. Press, Press Road.

Printed by the Manager. Govt. of India Press. Ring Road, New Delhi-110064 and

yojana



OUR ACHIEVEMENTS

Record Food Production in Tamil Nadu

TAMIL NADU scored a record food and commercial crop production last year with 64 lakh tonnes of rice, 20 lakh tonnes of millets, 3,25,000 tonnes of pulses, 14 lakh tonnes of oilseeds, 4,96,000 bales of cotton and nearly 20 lakh tonnes of sugarcane. Except in Sugarcane, the state is confident of surpassing this record in normal course during 1979-80.

Over 50,000 hectares released from paddy cultivation will be used to produce more groundnut and cotton to fill the gap between the demand and production of these commodities. Through the introduction of new high yielding varieties and hybrids, the production of millets is expected to go up by 15,000 tonnes.

More houses for workers in U.P.

IN UTTAR PRADESH 30,147 houses have been built for workers at a cost of Rs. 12 crore in different industrial towns Of them 29,991 houses have been alloted to the industrial workers in the State. This is part of the state government's plan to construct 79,400 houses at an estimated cost of Rs. 28.13 under its "Subsidised housing scheme for industrial workers'" during the sixth plan

So far, the scheme has covered 14 districts out of total 56 in the state, the maximum number of 18,015 houses have been built in Kanpur, who has the largest concentration of workers in Ghaziabad. Not more than 2,000 houses were built in every town.

The largest number of houses in the state 13,426 were built during the first plan period During Second plan 9,800 houses were built and another 4,737 houses were built in the third plan Houses built during fourth and fifth plan period were 1,348 and 836 respectively.

Chemicals from Tobacco waste

TOBACCO waste has turned out to be an important source for extracting a number of valuable chemicals.

Major breakthrough have been achieved in recent years by the Central Tobacco Research Institute under the Union Ministry of Agriculture and ITC's own research wing.

Nicotine sulphate, a chemical and 'solenesol', an organic compound, both developed by CTRI, are ready for commercial exploitation. While nicotine sulphate, the content of which in tobacco waste is about two per cent, can be used as an effective pesticide, and solenesol has its uses in pharmaceuticals.

National Chemical Laboratory at Poona has also patented a process using kerosene as solvent. The CTRI medium is resin.

Extraction of nicotine sulphate had not been economical earlier, in view of the excise duty on tobacco waste. The duty was removed in the last Union Budget making it commercially feasib extracting nicotine sulphate from tobacco waste

There are a number of other chemicals that be extracted from tobacco waste, are estimated about 10 per cent of the total production of 40(lion kg a year. Part of the waste goes to the industry still leaving a sizable quantity of waste mostly as organic manure.

The research wing of ITC, situated at Bangalo perfecting a technique to extract oxalic acid fron bacco waste as well as recycling it

Notable Performance

VISAKHAPATNAM Port handled a traffic 114.09 lakh tonnes, including 13.62 lakh ton of transhipment cargo, thus establishing an time record. Exports were 69.03 lakh tonnes . imports 31.44 lakh tonnes. About 59.60 lakh tonr of iron ore was exported through Viskhapatn Outer Harbour. The export of sugar alumina, man products and wheat, as also the import of miner oils, cement and finished fertilisers have shown , upward trend during the year For the first tim 62 394 tonnes of coking coal was imported throu this Port

Notable cargo handling performances of the ye include loading of 113,000 tonnes of iron ore on single day and handling 1,104,739 tonnes (total traffic in a month—August, 1978 The ac quisition of two high power tugs and one launch ha strengthened the Port's flotilla during the year Another highlight of the year was the inauguratio of the very modern "Fishing Harbour", providin accommodation for 15 trawlers and 150 mechanise boots with all the necessary ancillary facilities.

The traffic moved by the Port Railways rose to 89 9 (84 6) lakh tonnes An amount of Rs. 45.98 lakh was spent on medical facilities for the employees. The expenditure under welfare fund was Rs 2.99 lakh

Export of Polyester Textiles

POLYESTER fabrics are the most popular items of textile today which represent about 63 per cent of the world manmade textile trade Although Indian exports have been gradually increasing our share in world trade at present is negligible. The prospects of India's export trade in polyester textiles depend upon our ability to expand production of these goods and offer them in export on competitive basis

Exports of polyester and polyester blended fabrics showed a sharp increase in 1978-79 with the performance at Rs. 614.24 lakh as compared to Rs. 273.28 lakh in the corresponding period of the preceding year The major share in this was accounted by polyester blended textiles with an offtake of Rs. 578 86 lakh Meanwhile shipments of polyester filament and polyester blended textiles during April-September, 1979 were valued Rs 252 12 lakh registering only a marginal increase over the offtake in the same period last year

YOJANA

Volume XXIII Number 23

16 December 1979

25 Agrahayana 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address** : **Yojana**, New Delhi **Telephones** : 383655, 387910, 385481 (extensions 373, 402 and 420) Circulation : Business Manager, Publications Division, Patiala House, New Delhi-110001.

Subscription : Annual—Rs.18. Two Years—Rs. 30 Three Years—Rs. 42. Foreign Subscription: One year £ 2.70 or $ 5.00. Two Years—£ 4.50 or $9.0 Three Years—£ 6.30 or $ 12.50. Single Copy £0.12 or $ 0.25.

Editorial

Productivity - linked Bonus

CENTRAL Government's decision to give bonus to railwaymen, Post and Telegraph employees and workers in Defence establishments, has opened a new phase in employee-employer relations. It would be interesting to recall that the Bonus Review Committee set up on April 28, 1972, recommended that Government employees, including those working in railways, defence, posts and telegraphs should remain outside the purview of the payment of Bonus Act. The main consideration was "the state of the economy", implying that payment of bonus to this category would impose a heavy financial burden on the public exchequer and cause serious repercussions on many economic fronts. The concept of bonus itself has however changed with the passage of time. What was originally a gratuious relief in the nature of a voluntary gift has taken the form of a statutory right. If workers of a losing concern can have a minimum bonus of 8.33 per cent which in fact means that the bonus is a deferred wage, what ground can there be for denying such payment to others whose inadequate normal wage can be suitably supplemented only by way of payment of bonus ? While agreeing to pay bonus to a section of their employees, the Government, however, have refused to accept the theory that bonus is a deferred wage. It is linked with productivity. The new formula is of course based on sound economic principle. If productivity improves, labour and capital should share the incremental benefit without doing any harm to the economy

It is. however, not easy to measure productivity in Government establishments. The norm fixed for the railways has been pegged down to the performance level during 1977-78. It also concedes that the workers will continue to have a bonus equal to 25 days wages even if the efficiency level goes 10 per cent below this level. It may be still more difficult to find a suitable and generally acceptable norm in other spheres of governmental activity where payment of bonus will be made.

The reaction to the Government's decision varies in trade union circles. The Railwaymen's Federation has lauded it as the greatest event in the history of the trade union movement. There are others, who think that by accepting the Government's offer the railwaymen have surrendered their right to a minimum of 8.33 per cent bonus under any circumstances. In the industrial sector the payment of bonus at this rate is a statutory obligation under the Payment of Bonus Act, whatever the fall in productivity and whatever the loss to the company. The bonus to railwaymen will not be paid if productivity is less than 90 per cent of the base level. A productivity linked bonus is a serious blow to the concept of bonus as a deferred wage and may be, as they apprehend, a thin end of the wedge for the private employers to launch an offensive against the workers under their employment.

Whether the Government will extend the principle to the industrial sector is anybody's guess But the resistance of the workers to any such move is inevitable. At the same time it has to be admitted that extension of the principle of payment of bonus to the Central Government sector is a clear breakway from the past. The Government have done well by introducing the principle of productivity while making payment of bonus. With more claimants in the offing, the concept of productivity-linked bonus will assume increasing importance in the context of the nation's economy. ☐

Satisfying the needs of the Child

M. M. Rajendr

THE WORLD BANK in its latest World Development Report for 1979 paints a rather dismal picture of the projection for the year 1990 when it outlines three possible scenarios the brightest of which estimates the number of people living in poverty to be about 350 million and the darkest scenario indicating the figure to be 710 million. Coupled with this is the equally disquieting prediction that few of today's developing nations will be able to graduate into the ranks of the developed countries by the end of the century.

The problem of poverty in India, as anywhere else in the third world, is very intimately linked with the needs of the children, as hunger and malnutrition are the most striking and disturbing manifestations of poverty, affecting children more than adults, with more lasting damages and ill-effects. Malnutrition in children directly and indirectly is the single largest contributor to the high infant mortality and morbidity rates in India, and it bring out in relief the importance of children attaining desirable nutritional levels. It has been estimated in a survey conducted by the National Nutrition Monitoring Bureau that 3/4th of the pre-school children have body weights below 75 per cent of the normal weights for their age, indicating calorie undernutrition. Of these, 23 per cent suffer from severe degrees of malnutrition. 10 to 15 per cent of the children of the same age group suffer from deficiency of Vitamin A, running the risk of possible blindness. Malnutrition brings down the resistance to infection making them susceptible to infectious diseases and morbidity and the poor environmental conditions without even safe water to drink are causative factors for the very high infant and child mortality.

National Policy for Children

The needs of the children were first recognised and clear objectives were laid down for providing services for their welfare and development, in the National Policy for Children enunciated by Government of India in 1974. To provide a focus and forum for planning, review and proper coordination of the services for children, a high level National Children's Board with the Prime Minister as its president, the Ministers concerned in Government of India and the States, the Deputy Chairman of the Planning Commission and the experts in the fields of child welfare, was set up. This high level forum has been closely reviewing the various programmes for children and laying down guidelines for the directions in which programmes are to be oriented

Rajendran is Joint Secretary, Government of India (Nutrition & Child Development) Ministry of Social Welfare, New Delhi.

International Year of the Child

In the International Year of the Child National Children's Board has been appropria designated as the National Commission for the In national Year of the Child. Under its guidance ; direction, a National Plan of Action for the In national Year of the Child has been drawn up ; widely circulated. The National Plan is a comprehen document covering action programmes in the field child health and nutrition, including environme sanitation and supply of safe drinking water, educati including pre-school, elementary and community e cation, social welfare, legislation for children, public and fund raising.

The theme of the National Plan of Action is "Rea ing the Deprived Child". The needs of the children so vast that any attempt to satisfy them comprehe vely within a short time is likely to prove aborti Resources available are in no way comparable to needs. It is because of this constraint that the Plan l emphasis on giving high priority to children of the wea sections of society such as Scheduled Castes, Schedu Tribes and poverty groups in urban slums and r areas often beset by droughts and floods and o hazards of marginal existence.

The National Plan is thus able to give a cl direction as to how various child welfare program should be designed and implemented. The pride place in the National Plan appropriately goes nutrition and child health programmes. The needs the children below 6 who are nutritionally more v nerable have to be accorded a high priority catego These constitute 21 per cent of the population and India today, we have about 135 million children this age group. A rough estimate of those who su from severe malnutrition may be taken as about million and our immediate aim should be to see t the nutrition intervention programmes are direc to reach these children so that they are not expo continuously to the hazards of malnutrition and attendent problems of child health.

Case of Nutrition Intervention

The question has often been raised whether in t context of widespread malnutrition, we should rely general developmental effort and providing job opp tunities to the unemployed to raise the income le of the poverty groups or whether we should also go for direct nutrition intervention strategies. It is experience that economic development per se does necessarily improve the lot of the poverty groups even if it is coupled with well-designed income dis bution policies, it takes a long time for those gro to benefit. Meanwhile do we allow the children to co nue in abject poverty, misery and malnutrition? Si

the nutritional status of these children have an important role to play, in the interim period.

The major nutrition intervention programme of the Government is the Special Nutrition Programme for pre-school children, pregnant women and nursing mothers providing nutrition supplement of 300 calories and 10 grams of protein per child and 500 calories and 25 grams of protein for mothers for 300 days in a year. The scheme now covers about 7 million children with food commodity assistance partly from CARE and World Food Programme and partly with local resources. During the current year, it is proposed to expand this programme by 2.1 million children and mothers and during the Plan period upto 1983 by 8 million

The Applied Nutrition Programme is aimed at nutritional education through demonstration and production of nutritional food. It covers 1,650 blocks out of about 5,000 in the country, but the recent evaluation has brought out certain deficiencies Further expansion is therefore only in the direction of concentrated activity as in the newly evolved Intensive Development Projects. To counter nutritional anaemia, vulnerable women and children to an extent of 10 million, are covered under the prophylaxis programme of distribution of iron and folic acid tablets. Vitamin A deficiency is being tackled through a programme of administering concentrated dose of Vitamin A every 6 months to children below 5 and 11 million children are covered under this scheme.

While pre-school children are the priority groups, children in the age group of 6 to 11 in the primary schools also suffer from nutritional deficiencies and a school lunch programme is in operation with a coverage of 7.5 million school children. This has the additional advantage of increased enrolment and improved attendance.

The Integrated Child Development Services Scheme is an innovative model developed as a result of the experience gained in administering nutrition and other child welfare services in the last several decades. It aims at delivering a package of services to children below 6 and expectant and nursing mothers consisting of supplementary nutrition, health check up, immunisation, referral services, nutrition and health education and non-formal pre-school education for children in the age group 3 to 6 At present the scheme covers 150 projects each approximately with a population of 100,000 and the scheme is slated for further expansion Preliminary results of the evaluation of the health and nutrition components of ICDS by the All India Institute of Medical Sciences indicate a high degree of efficiency in the delivery of services and substantial improvement in the nutritional and health status of the children covered by the programme.

Health Programmes

Programmes for health and family welfare in the International Year of the Child aim at substantial stepping up of immunisation. During the current year it is proposed to immunise 6 million pregnant mothers against tetanus, 32 million children against small-pox, 13 million children against tuberculosis, 12 million children against DPT, 20 million children against diphtheria and tetanus, 5 million children against typhoid. Prophylaxis of 25 million children against Vitamin A deficiency and 11 million mothers and 10 proposed.

Safe drinking water, an essential prerequisite for child health and prevention of water-borne diseases, is not available in 153,000 villages identified as problem villages They have no source of drinking water within a radius of 1 6 kms. or water at a depth of 30 metres. Under the Accelerated Rural Water Supply Scheme, Rs 60 crore have been provided for supply of safe drinking water to these problem villages in addition to what is being done in the State sector under the Minimum Needs Programme and it is estimated that 60,000 villages will be covered by the end of March 1980.

Social Welfare

In the field of social welfare, two important programmes deserve mention. They are the scheme of creches for children below 5 of mothers who are working or ailing and the scheme for the welfare of Children in Need of Care and Protection. The former, as the name implies, is aimed at providing child care for children who would otherwise be left uncared for when mothers go to work. At the same time, it also helps the mothers taking up employment without worry about their children. The scheme covers about 34,625 children so far and it is proposed to expand this by 5,000 during the current Plan The latter scheme is for providing institutional and foster care for destitute and orphans children by providing assistance to voluntary organisations to the extent of 90 per cent for care and maintenance of these children upto the age of 18 So far about 33,000 children have been covered under this scheme. Besides, several Governments and voluntary organisations have their own schemes for creches and orphans.



Resource Constraints

Services for children fall within the competence of the State Government. However, the Government of India has been taking the initiative by providing financial incentives for schemes for the welfare and development of children. Both in the State and in the Central Government, there is a growing feeling that this sector deserves to be allocated more resources than they are currently able to get. The planner generally tends to consider child welfare and child development programmes as mere welfare programmes, overlooking the fact that investment in children is really an investment in human resources development. Though one cannot quantify the return in terms of monetary value, if we consider this investment as a long gestation investment in human resources development, the returns in the form of higher survival rate and better human material would be far more than what economists may consider as a reasonable return We do not hesitate to invest in raw materials and machines but seem to waver when it comes to investment in the man behind the machine. This double standard is a cruel anachronism which should cease early for the future of mankind. This would be possible only if there is awareness among the decision makers at all levels for adequate emphasis and importance to be give to the development of child, which our National Policy considers as our "supremely important asset".

The Draft Five Year Plan 1978—83 has included in the Revised Minimum Needs Programme, essential services to meet the needs of the children such as health care, safe drinking water, nutrition and services for urban slums. Even in this Programme low priority is attached to child welfare programmes.

In the voluntary sector, many organisations had been taking up various child welfare programmes, but in the last few decades, due to socio-economic changes the voluntary organisations are not able to attract the support of philanthropic individuals to the extent required. The Government, therefore, had directed its efforts to utilise the services of voluntary agencies by providing finances to them for taking many child care programmes. This has the twin advantage of sustaining voluntary effort in the field and at the same time taking advantage of a sector which by its very nature is better suited to administer children's programmes than the normal bureaucratic set up. In this context, mention may be made of the National Children's Fund, which is a recent creation to provide assistance to voluntary organisations for child welfare programmes. But for the Fund to be effective, generous and sustained contribution from the public is necessary

Manpower

Next in importance to financial resources, is the requirement of trained manpower which often is a bottleneck in implementing social welfare programmes. In child welfare, we have the paradoxical situation of on the one hand not having trained manpower for the delivery of services at the grassroot level such as Balwadis and child care centres and on the other having trained manpower which is remaining unemployed. Uptil last year more than 12,000 Balsevikas have been trained in the Balsevika Training Institutes all over the country. Of them, more than 4,000 are still unemployed. One way of improving the situation stipulate that voluntary organisations taking G ment grants should utilise the services of t Balsevikas. Of course, there will be practical diff But at the same time the voluntary organis ties in implementing this as a compulsory me should recognise the utility of properly trained p nel and increasingly make use of them in institutions.

Community Participation

For mobilising local support for children's prc mes, the participation of the community partic women would be of great help. To get the b turn out of every rupee invested, it is necessa make it a people's programme so that the village munity could gradually take responsibility for of the functions. The village women's clubs provide forums for village women to get to holds promise for being developed to take over of these responsibilities and for channelising munity's support to these programmes. Pro vocational training for new skills and upg of existing skills would not only help activise wc clubs but also to supplement the income of the v which will go mainly to improve the food int the family thereby helping to achieve a better nut status for children.

Conclusion

We have seen various constraints and limit that operate in taking up programmes for ch The needs of the children are many, but the res are limited. It would, therefore, be necessary to a strategy which would maximise the benefits wi available resources. Perhaps the most important st is the proper selection of the target groups. I selection of ICDS-projects the government ha emphasis on taking up backward areas and p groups. Similarly for other programmes also the groups must be selected judiciously so that they t the most deserving. As an illustration we may ta Special Nutrition Programme which had been re to earlier. Though the programme is meant for ch below 6 years of age, it is the children betwee months of 6 to 30 who are the most vulnerabl should get high priority but often the selectio beneficiaries does not reflect this priority. Sir in the Scheme for Orphans, it is not always the destitute children who get the benefits of the sc but sometimes children with one parent or even two parents with the connivance of the local vol organisation, are able to get the benefit

The International Year of the Child has dev considerable enthusiasm among people for chil programmes and sensitised them to the needs c children. We all known that the IYC is not a on affair, but is a springboard for action for the f The advocacy of the cause of the child which ha done so widely during the Year, we hope, will b to influence the decision makers at all levels in the due importance and priority to the programn children. The future of our children is in our l Will their world be more campassionate, more h more kind and more conducive to healthy develo

of human effort and creativity? We have to make up our minds and clearly exercise our options. If we fail to do it now, we would have missed the opportunity to provide the kind of world whom we would like our children to have. Posterity will not forgive up for this failure. □

Museum On Wheels

S. K. Ray

A MOBILE exhibition on modern agricultural practices, the first of its kind in the country, is now touring the districts of West Bengal, taking to the door-step of the farmer the latest in the agricultural technology.

Planned, designed and fabricated by the Birla Industrial and Technological Museum of the National Council of Science Museums in collaboration with different Government departments and academic and professional institutions this museum on wheels will carry the message of science to the remote corners of the country. The mobile unit which was inaugurated at Beldanga in the district of Murshidabad by Shri Kamal Guha, the West Bengal Minister of Agriculture, on 3rd July last will later proceed to cover the rural areas of other States.

Itself an exhibition hall this Museobus has 24 panels with as many working models and exhibits that cover the entire agricultural operation right from soil testing to intensive cropping. The first of the exhibits shows the method of soil testing to know precisely whether the plant's requirement of food is available in the soil and, in case of deficiency, how much is to be supplied from outside. Then come models one by one of different equipment like Mould Board Plough, Power tiller and tractor to be used for appropriate land preparation. The lesson sought to be conveyed to the farmer is how to do more tillage in a shorter time and what is the best method of tillage on small plots. The next three panels display the various types of fertilizers and the techniques of their correct application.

Unique among them is the one that shows how Gobar gas can serve as a single source of an improved variety of organic manure and energy as well. Then there are models on the used of high-yielding varieties of tested seeds and their treatment before sowing to minimise attacks of plant diseases. An ideal seedbed and transplantation in lines are shown in another model. Next is a seed drill which demonstrates how the job of sowing seeds in lines can be made much easier, helping at the same time future inter-culture operations. A few exhibits acquaint the farmer with his enemies—the various types of insects, pests and plant diseases and explain the best ways of plant protection. There are two models on Border Strip method of irrigation and Sprinkler irrigation which seek to impress on the farmer the need for a judicious use of water as an indispensable input especially in areas with scanty irrigation facilities. Next come exhibits on the latest techniques of post-harvest operations like thrashing and storage to ensure minimum wastage. The last two models of the mobile unit are on 'Round the year cropping pattern' and 'Own your own vegetables'. In the first one three suitable cropping patterns are suggested for increasing cropping intensity, making the same piece of land yield a number of crops in a year. The other contains useful information on how to grow vegetables on small plots and thus add extra vitamins to the farmer's dish at least expense.

This novel mobile science exhibition unit on agriculture is drawing inquisitive crowds of farmers who are keen to profit from the latest know-how. The unit will not only help initiate the farmer into the modern world of agriculture but will also serve as a useful aid to different agencies engaged in agricultural extension activities.

The Birla Industrial and Technological Museum, the first science museum in India, is a pioneer in introducing regular mobile science exhibitions in the country. Since the first such exhibition was inaugurated on November 17, 1965 eight mobile science units on different subjects have taken to the road and visited different places in West Bengal, Bihar, Orissa, Delhi, Uttar Pradesh, Haryana, Andhra Pradesh, Assam, Nagaland, Meghalaya and Tripura. Till March this year 1,875 such exhibitions were held, the total number of viewers being 46,34,253. All these units were, however, oriented to school students.

The Museum is now venturing into other fields. The mobile agricultural science unit is its first creation in this direction. Next on their schedule are mobile units on food and nutrition and on public health and hygiene. Twenty district science centres are also planned to be set up throughout the country beginning with one at Purulia in West Bengal where an experimental centre is already working. □

K. Ray is our Senior CorrespS.ondent in Calcutta

Reserve Bank in Agricultural Credit System

A. Sivarama Prasad

MANY Structural and organisational changes have taken place in the agricultural credit system in India in recent years. After independence provision of adequate and timely credit for agriculture was identified as one of the major programmes of economic development. Following the recommendations of the Rural Credit Survey Committee in 1954. the system of integrated cooperative credit was adopted on a nation-wide basis.

The Reserve Bank of India provides short term credit limit under Section 17 of the R. B. I. Act to the State Co-operative Banks at concessional rates. Under Section 54, the Bank is required to set up a special Agricultural Credit Department to maintain necessary staff to study and review all questions of Agricultural Credit for consultation by tht Government of India, the State Government, State Cooperative Banks and other banking organisations.

The functions of the Reserve Bank in the sphere of agricultural credit could be divided into : (1) regulatory and financial functions and (2) Promotional and developmental functions. It makes available under various sections of the RBI Act credit limits for several purposes at different rates of interest. Its loaning to the priority sectors are at concessional rates, such as a seasonal agricultural operations loans at 1-1/2 per cent below bank rate (b) finance for marketing of crops including cotton and kapas at 3 per cent above bank rate; (c) money to purchase and distribution of fertilisers at 3 per cent above the bank rate; (d) short term loans to agricultural Refinance and Development Corporation at bank rate; (e) Medium-term loans for agricultural purposes at 1-1/2 per cent below bank rate; (f) conversion of short-term loans into medium-term loans in scaricity affected areas, at 1-1/2 per cent below bank rate, from the Agricultural Credit Stablisation Fund; (g) Medium-term loans for purchase of shares in cooperative sugar factories at bank rate, loans to State Governments for contribution to the share capital of cooperative credit institutions at 6 per cent from the long-term operations fund; and (h) long-term loans to Agricultural Refinance and Development Corporation at 6 per cent.

As far as regulatory functions are concerned, the cooperative banks are now within the purview of the Banking Regulations Act, 1959, and as such they are governed by the norms and disciplines pertaining to quantum, terms and conditions of certain type of advance as well as permissive volume of loans outstanding against certain commodities which are susceptible to price rise etc. As financiers, the role of the Reserve Bank in the sphere of Agricultural Credit has considerably increased as would be seen from the fact that while in the year 1950-51, the Reserve Bank sanctioned credit limits for seasonal agricultural operations to the extent of only about Rs. 8 crore for the year 1976-77, the total limits sanctioned for this purpose were Rs. 696 crore. The increase in the total limits sanctioned has been specially significant since 1972-73 mainly due to factors like increased cost of agricultural inputs, programmes of universal membership, steps to be taken to regularise cooperative credit structure. The operations on the Reserve Bank's credit limits is subject to certain important norms like the maintenance of non-overdue cover, performance of the cooperative banks in making at least 20 per cent of their advances to small farmers and weaker sections, maintenance of seasonality in operations on the credit limits, mobilisation of deposits and so on.

But in regard to the marketing limits, there has not been much progress in the development of cooperative marketing and processing and hence limits sanctioned to only Rs. 9 crore. Marketing credit is available from the RBI only to the extent of recovery cooperative dues by linking production credit with marketing. In regard to credit for purchase and distribution of fertilisers also after the consortium of commercial banks decide upon their own share, supplementary requirements are met by the Reserve Bank.

In the sphere of long term agricultural credit, the Reserve Bank's role is mainly that of a coordination in the sense that it organises support to the debenture programmes of the land development banks whose main responsibility is to disburse investment credit for purposes like pumping sets, milch cattle etc, are made available at 1½ per cent below the bank rate. Such medium-term loans are also subject to the same discipline like schematic loaning arrangements for collection and marketing of produce etc. The grant of medium-term conversion loans at 1½ per cent below the bank rate is related to the existence of scarcity conditions in specified areas affecting the cultivator-members ability to repay his short-term loans.

The Reserve Bank has been conducting special studies like study of over dues, study of special problems in States of MP Bihar, UP, Rajasthan etc. Recently, the RBI has initiated a scheme for intensive development of selected districts under which special officers are allotted by the Bank to work in full collaboration with the cooperative and commercial bankers as well as government officials in the districts to formulate local schemes and prepare concrete action and credit programmes for each of the 41 selected districts in the country.

The RBI, thus, has tried to bring about in its policies as well as working methods of suitable blending of both regulatory and financial functions as well as promotional and developmental functions and has been trying to play its role as a coordinator as well. □

Sivarama Prasad is in Commerce Department, V. S. R. College, Tenali

Handloom Industry in India

T. Yagaiah

THE FATHER of the Nation identified Charkha—spinning wheel—as the symbol of unity of India's economic freedom, equality and also as an instrument of mass employment and therefore, ultimately in the poetic expression of Shri Jawaharlal Nehru, "The Livery of Indian Freedom". Handloom industry is the largest decentralised traditional cottage industry in the country. Before the advent of British rule, this industry had been flourishing throughout the country. Handloom industry has a vital role to play in the economy of the country in providing gainful large scale employment in rural areas and increase the earning capacity of millions of handloom weavers and lakhs of cotton producing farmers. It is next to agriculture in providing employment in rural areas.

and he must apply that systematic knowledge in his work. No one can doubt the artistic skill of Indian weaver.

Weavers can broadly be classified into three categories viz. :

(1) The weaver who is a member of a co-operative society and works for it.

(2) Out worker, who works for agencies other than co-operative society.

(3) Independent worker, who is working on his own account.

The table below gives the percentage distribution of weavers by agency for which they are working :—

Table—I

Agency	At present	Before
1. Cooperative	29.0	18.7
2. Master weavers (MW).	12.1	10.3
3. Business master weavers (BMW) and traders	14.5	13.1
4. Khadi centre	0.6	0.2
5. Own account	32.1	42.5
6. Cooperative & MW/BMW/traders	2.1	0.7
7. Own account and coop/MW/traders	6.8	2.3
8. Others	0.7	5.4
9. Not recorded	2.1	6.8
Total	100.0	100.0

There are 38,07,000 handlooms operating in the country with the annual production of 2,700 million metres of cloth, worth Rs 11 hundred crore. There are ten million people directly depending on this industry. Pages of industrial history of India reveal the fact that the handloom products gained worldwide popularity. The characteristics of this industry are, it is basically a family-based industry, where son learns the art of weaving from the father; all members of the family participate in the process of weaving at various stages. Weaving is both art and science. Weaver should have scientific knowledge

Yagaiah is Project Evaluation Officer Bangalore.

The above table shows that 29 per cent of weavers are working for co-operative societies and master weaver and business master weaver put together 26.6 per cent and 'own account' registered only 32.1 per cent. There is an appreciable rise in the membership of co-operative sector, and decline in 'own account'. The role of master weavers has declined but still they play a vital role.

It is evident from the above figures that master weaver and business master weaver are in commandable position. Their role is very vital for the industry and for the weaver.

Table—II
Role of Master Weavers

State/Union territory	District	Coopera-tives	Master weavers	Business master weavers & traders	Khadi centre	Own acconnt
Andhra Pradesh	Karimnagar	36.5	26.1	19.1	7.8	20.9
	Kurnool	68.5	42.7	1.4	0.7	48.3
Tamil Nadu.	Salem	55.0	26.8	6.4	1.8	28.6
Maharashtra	Nagpur	33.3	30.6	29.4	..	47.2
Karnataka .	Bijapur	43.8	28.8	29.4	..	24.2
Orissa	Sambalpur	52.2	..	..	..	47.8
West Bengal	Midnapur	21.3	..	14.0	..	76.0
Tripura	—	93.0	4.8	..	..	45.6
All States & Union Territories	—	47.5	21.8	10.0	1.3	41.6

The condition of weavers who are working for co-operatives is relatively better than other weavers. How the handloom co-operative society works can be seen with the example of Karnataka State Cotton Handloom Co-operative Apex Society. The sale and purchase position of the above apex society from the year 1975-76 to 1978-79 is given below in Table III

It is evident from the figures both purchases and sales of the society are steadily and gradually increasing. There are fluctuations in purchase and sales, if one compares from 1970 onwards. The society has increased its turnover during the year 1978-79 to Rs. 46.36 lakhs. The Government of Karnataka is also readily extending financial help to this society. The society has taken a number of loans from the Government and this can be seen from the Table IV.

The borrowing capacity of the society has increased from Rs. 29.82 lakhs in 1977-78 to Rs. 45.95 lakhs in 1978-79.

The problem of weavers, who are working for other agencies and on their own account, needs special attention for their wages are less than they should be. They are totally controlled by master weavers. Master weavers supply the yarn and other inputs with their specifications and take back the final output. The weaver, who is a wage earner, his earning capacity depends upon :

$W=F(E, P, R)$

(E=Efficiency P=Price level of inputs and outputs R=Profits).

At any given period of time, wage depends on the efficiency of the weaver and prices that are ruling in the market for the inputs and the level of demand for final products and its price level and the rate of profit expected to earn by the master weaver.

Given efficiency and price level of inputs and output, profit determines the wages rates. Wage directly depends on the level of profits.

$W=P \times MPL.$

(P=Price MPL=Marginal Physical Product of Labour).

Under co-operative conditions, wage is equal to value of marginal physical product of weaver. But the real situation existing in handloom industry is wages are less than value of marginal physical product.

$P \times MPL-W=R$

Table—III

Sale and Purchase Position of Apex Society

(Figures in lakhs)

Particulars	1975-76	1976-77	1977-78	1978-79	(upto April, 79)
Purchases :					
(i) H.L.F.	17.71	25.28	27.29	41.94	
(ii) Yarn	0.44	0.36	1.37	1.13	
Total	18.15	25.64	28.66	43.07	
ales :					
(i) H.L.F.	21.86	29.33	32.79	46.36	
(ii) Yarn	2.48	0.63	1.22	..	
Total	24.34	29.96	34.01	46.36	

Where value of R is not equal to zero The existence of high value of R is posing practical problems R is equal to the difference between the value of marginal physical product of weavers and wage cost to the employer or master weaver. The main reason for the high value of R can be stated as most of the weavers own no property and lack borrowing power and that is the reason why they are rather forced by circumstances to take the services with those who can provide means of production and pay wages. Under such a situation, the value of R can be minimised if not eliminated altogether by giving minimum wages to weavers. Lack of sound financial position is the root cause of this situation. If once financial position is improved, he will be in a position to purchase the yarn and increase the output. At present neither cultivator is getting reasonable price for his raw cotton nor weaver is getting a remunerative wage for his work. Many weavers being dissatisfied with low level of earnings in handloom industry are leaving their age-old traditional work in search of employment elsewhere in the cities, thereby increasing the process of urbanisation.

Under-employed and low-paid weavers on the one side, poor people without sufficient cloth on the other side is a situation definitely inconsistent as the country has sufficient quantity of cotton and a good

Handloom Industry In India

Facts and Figures at a Glance

Number of Handlooms	3.8 million
(a) Cotton Handlooms	3.5 million
(b) Silk, Art Silk, Woolen & others	0.3 million
Number Employed	10 million
Production of Handloom Cloth (1977)	2,040 million metres
Production Target—End of Sixth Plan	3,700 million metres

Financial Outlays/Targets of Sixth Plan :

(a) Government of India	Rs. 1,890 million
(b) State Governments	Rs. 1,830 million
(c) Institutional Finance	Rs. 4.000 million
Number of Intensive Development Projects started (10,000 looms each)	25
Number of Export Production Projects started (1,000 looms each)	21

Exports of Handloom Products :

(a) 1977-78	Rs. 2,400 million
(b) 1978-79 (Anticipated) .	Rs. 2,740 million
Institutes of Handloom Technology (Salem and Varanasi)	
Weavers' Service Centres	21

Intensive Development Projects :

These projects are located at the following places :—

In Andhra Pradesh : Puthur, Kovur, Vetapalam and Guntur-Krishna District; in Assam : Nalbari, Gauhati and Kamrup; in Bihar : Darbhanga, Madhubani, Biharsharif, Gaya, Ranchi, Hazaribagh and Bhagalpur; in Gujarat : Surendranagar, Banaskantha and Ahmedabad; in Haryana : Bhiwani; in Jammu and Kashmir : Pampore, Pulwama, Tral, Tehsil Chodoora and Badgam; in Karnataka : Rabakavi, Banhatti and Ilkal; in Kerala : Trivandrum, Cannanore, Calicut and Palghat; in Madhya Pradesh : Chanderi, Raigarh, Sakti, Baloda, Kasdol, Raipur, Durg, Mendiwada, Sausar and Maheshwari; in Maharashtra : Nagpur; in Manipur : Manipur; in Menghalaya : Meghalaya : in Nagaland : Kohima; in Orissa : Bolangir; in Rajasthan : Ajmer, Alwar, Bhilwara, Jaipur, Jodhpur, Jalore Kon and Pali Districts; in Tamil Nadu : Erode, Kancheepuram, Salem and Madurai; in Uttar Pradesh : Gorakhpur, Basti, Mau Nath Bhanjan, Bijnor and Meerut : and in West Bengal : Nadia, Malda, West Dinajpore, Temluk Sub Division, Hoongly District.

Export Production Projects :

These projects are located at the following places :—

Hyderabad and Janagaon in Andhra Pradesh; Sualkuchi and Upparhali in Assam; Bhagalpur in Bihar; Bharat Nagar in Delhi; Panipat in Haryana; Simla, Kinnaur, Bilaspur, Mandi, Kulu, Kangra and Chamba in Himachal Pradesh; Samba in Jammu & Kashmir; Bangalore, Dharwad and Chitradurga in Karnataka; Cannanore in Kerala; Bilaspur, Raigarh and Gwalior in Madhya Pradesh; Sholapur in Maharashtra; Bhubaneshwar in Orissa; Muthialpet and Pondicherry in Pondicherry; Amritsar, Tarn Taran, Hoshiarpur, Malarkotala and Anandpur Sahib in Punjab; Bikaner, Churu, Jaisalmer and Jaipur in Rajasthan; Karur and Kurinjipadi in Tamil Nadu; Agartala in Tripura; Farukhabad and Etawah in Uttar Pradesh; Bankura, Nadia, West Dinajpur, Murshidabad and Purulia in West Bengal.

19 DPD/79—3

Table—IV

Government Loans availed by Society

Government Loans	As on 30-6-77	30-6-78	30-4-79
(a) Handloom development loans	9.60	9.60	9.60 lakhs
(b) Sizing and warping plant loans	6.50	6.60	6.50 ,,
(c) Government share capital loan	..	5.00	5.00 ,,
(d) Apex Bank (hypothecation)	8.22	2.75	16.40 ,,
(e) Apex O. D. against F.D.	5.50	8.30	8.45 ,,
(f) R.B.I. Loans	..	5.00	..
Total	29.82	37.25	45.95 ,,

number of efficient weavers. The Government have taken up many projects and programmes for the development of this industry. To redress the grievances of handloom industry, the Government of India, established All India Handloom Board, to look after the interests of the industry in general and weavers in particular. Major objectives of this Board are : (1) to supply raw material, (2) to provide marketing facilities and (3) to protect the industry.

Development Commissioner for Handloom has been appointed by the Government to implement various package schemes. There are various development programmes :

1. Implementation of progressive schemes, for modernisation on scientific basis to attai higher productivity ;
2. To bring all weavers under co-operative fold;
3. To extend financial and technical assistance ,
4. Expansion of raw material supply ;
5. Control of yarn prices ; and
6. Imposition of restrictions on powerloor industry.

This industry has to go a long way to attai self-sufficiency and capacity to stand on its own fe and give reasonable income and provide gainful en ployment to weavers and provide cloth at reasonabl prices to all the consumers. Then only the dream c Mahatma Gandhi will be realised. □

Rural Occupational Structure Changes

RURAL areas of Haryana are fast getting diversified especially in the occupational structure. The state ceased to be pre-eminently agricultural state as a big chunk of the rural population has taken to non-agricultural occupations, even while residing in their ancestral villages.

According to the first economic census conducted by Economic and Statistical Organisation, about 51 23 per cent of the total non-agricultural establishments are located in villages while 48.77 per cent in rural areas. Nearly 36 per cent of the total working force is employed in rural establishments.

Of the 41,199 non-agricultural establishments in the state 21,105 are situated in villages. Percentage of estabilshments located in the rural areas are : Gurgaon—13.71 per cent Ambala—12.55; Kurushetra—11.36; Hissar 10.14; Karnal—9.68 and Rohtak 8 97. Sirsa district has the lowest percentage of establishments in its rural areas.

In spite of its diversification the farm yield of the state has been increasing in geometrical proportions as the farmers are adopting latest techniques and high-yielding varieties of seeds. Moreover, the farming is mechanised.

More Marine Fish Catch

Eleven per cent increase in Marine Fish annu landing was recorded in 1978 ; the total catch w 14 lakh tonnes compared to 12.6 lakh tonnes i 1977.

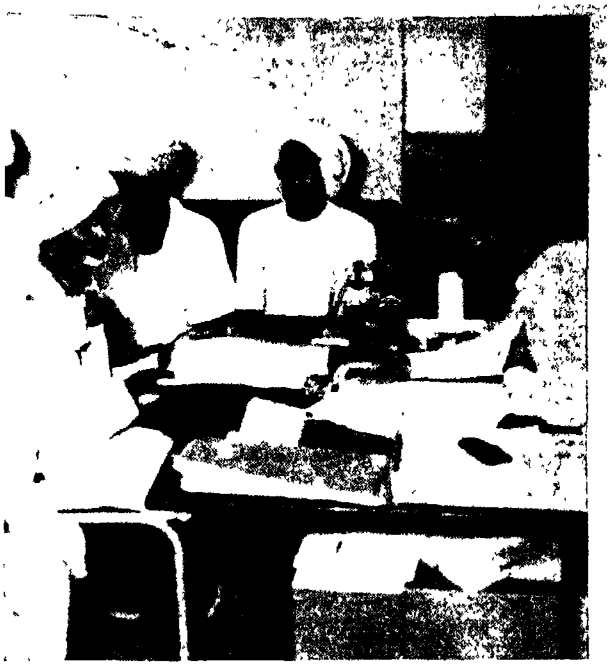
Kerala landed 3.73 lakh tonnes of marine fish fo lowed by Maharashtra—2 84 lakh tonnes ; Tamilnad 2.13 lakh tonnes ; Gujarat—2.02 lakh tonnes ; an Karnataka—1.53 lakh tonnes. Each of the oth marine states landed less than one lakh tonne of fis Every maritime state, except Andhra Pradesh, regi tered an increase in their total annual marine fis landing.

In Karnataka, the Purse-seine catches increase sharply from 25,000 tonnes in 1977 to 75,000 tonn in 1978. This is almost 50 per cent of the tot marine fish landing in the state. More than 40,00 tonnes of Bombay duck catches increased over the pr vious record of 85,000 tonnes of fish landing in Mah rashtra and Gujarat. Ribbon fish component incre sed to 29,000 tonnes in 1978 against 5,000 tonn in 1977 in Tamil Nadu There was considerabl increase in Penaeid prawns catches in Maharashtra it was 41,000 tonnes in 1978 as against 27,00 tonnes in 1978.

The major components in the marine fish catc during 1978 were oil Sardines, Penaeid prawns, Bon bay duck, sciaenids and mackerel.

Regional Rural Banks

Dr. Harpal Singh



THE present-day Regional Rural Banks owe their origin to the recommendations of a Working Group on Rural Banks appointed by the Government under the chairmanship of Shri M. Narasimham on July 1, 1975. The Group had been asked to "examine in depth, the setting up of new rural banks as subsidiaries of public sector banks to cater to the credit needs of the rural people". In an unusually quick report which the Group submitted on July 30, 1975, it observed, "in a country of the size and regional diversity as our, no single pattern, be it commercial banks or cooperative credit, can be expected to meet all the emerging requirements in all areas. A degree of adaptation and improvization is called for and the range of institutional alternative widened It is in this context that we have come to the conclusion that a new type of institution is necessary" (emphasis added). The Group could not be quite sure about the optimum size of operations, coverage, etc. and hence it favoured a cautious approach by recommending the setting up of five Rural Banks as pilot institutions in selected areas.

Some feeble and mute opposition notwithstanding, the Government accepted the recommendation of the Group. An Ordinance was promulgated on September 26, 1975, which was subsequently replaced by Regional Rural Bank Act of 1976 in February 1976. According to this Act, the RRBs were to be set up "with a view to developing the rural economy by providing, for the purpose of development of agriculture, trade, commerce, industry and other activities in the rural areas, credit and other facilities (emphasis added) particularly to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs and for matters connected therewith and incidental thereto."

It is clear from the above that the Regional Rural Banks had been conceived (a) as an answer to meet the diverse and heterogenous needs of rural people with different socio-economic and agro-geographical conditions. (b) directed to specific economic and occupational groups, i.e., the small and marginal farmers, agricultural labourers, artisans, etc, and (c) to be catalytic agent to develop the rural economy by providing not only credit but other facilities. It is the triumvirate of these three that provides the frame both for reviewing the performance of these institutions as well as for identifying their perspective in the times ahead

Dr. Harpal Singh is Director Agriculture and Rural Development Division, Planning Commission The views expressed are of the author's own and not necessarily of the organisation he serves

Performance

By the end of March 1979, 56 Regional Rural Banks opened in the country, have spread 1836 branches and have lent over Rs. 140 crore. On an average thus an RRB had about 33 branches. The spread of RRBs branches and the borrowal accounts in the States is as follows :

State	No. of RRBs	Total No. of branches.	Total No. of borrowal accounts.
Andhra Pradesh	3	237	2,74,368
Assam	1	30	5,153
Bihar	10	222	73,508
Gujarat	2	2	189
Haryana	2	59	27,562
Himachal Pradesh	1	22	4,751
Jammu & Kashmir	1	42	1,24,917
Karnataka	4	139	1,24,917
Kerala	2	104	2,66,964
Madhya Pradesh	5	140	61,246
Maharashtra	1	49	6,541
Orissa	4	148	2,00,938
Rajasthan	4	162	48,148
Tamil Nadu	1	53	42817
Tripura	1	24	20,64[illegible]
Uttar Pradesh	10	310	2,02,35[illegible]
West Bengal	4	93	47,24[illegible]
	56	1,836	14,15,91[illegible]

One can compute from the table that the average number of borrowal accounts per branch and per RRB is 771 and 25,284 respectively. The RRBs have achieved a fair coverage in certain States like Bihar and Madhya Pradesh where the gap between the demand and supply of credit from existing institutional agencies is large. On the other hand, the severaly un-banked and under-banked areas of North-Eastern region, Jammu and Kashmir, Assam and Himachal Pradesh, have been rather poorly covered by the RRBs. States like Rajasthan, Gujarat, Maharashtra, Tamil Nadu have also poor coverage in terms of borrowal accounts. The Hill and the Tribal Areas, which could justify the need to have diverse institutional structure of credit appropriate for them, seems to have been left behind in the coverage of RRBs. The 10 RRBs with 310 branches which have otherwise shown a good coverage of U.P., too have completely bypassed its tribal and hill populuation.

Rural Indebtedness

The number of marginal and small farmers advanced loans so far per branch is only 511 and per RRB 16,768. For 'artisans' class, the numbers are 239 and 7,850. Consumption loans are almost negligible. Taking into consideration that about half of the RRBs are about three years and more old, this does not sound a particularly impressive record. The Review Committee on Regional Banks (Dantwala Committee, February 1978) which was otherwise quite impressed with the record and performance of RRBs brought out the fact that the percentage of small/marginal farmers covered by RRBs was only 0.1 per cent in Mallabhum, 0.7 per cent in Cannanore, 0.8 per cent in Koraput, 0.9 per cent in Moradabad and 1.4 per cent in Bhiwani. The coverage of agricultural labourers is still poorer being almost negligible in most of the 12 RRBs covered by the Committee. Except the RRBs in Jaipur, the record was only a shade better in the coverage in rural artisans than of small and marginal farmers. When we compare the percentage of indebtedness among these categories of rural households as revealed by the various recent studies, with the percentage of these categories of borrowers (to total) financed by the RRBs, the picture is one of very wide gap indeed. For example, the Rural Labour Enquiry of 1974,75, fourth in the series, revealed that the proportion of farm labour households which were indebted moved up from 60.6 per cent in 1964-65 to 66.4 per cent in 1974-75. The incidence of indebtedness was more than 70 per cent in Bihar, Rajasthan, Punjab, Haryana, Andhra Pradesh, Tamil Nadu and Kerala. According to the All-India Debt and Investment Survey also, about 34 per cent of Artisan households reported cash dues outstandings on 30th June 1971. Although, about 66 per cent of the RRBs' borrowers were small and marginal farmers and 31 per cent rural artisans, the gap in terms of number of borrowing households to the total households even in the command areas of RRBs is unmanageably larger to say the least.

Credit Facilities to Weaker Sections

Another interesting feature of RRBs is that while the coverage of population and potential borrowers is extremely limited, the average amount of loan advanced per borrowing account/person is quite high being Rs. 1,012. Further, true to the culture of their parent bodies—the sponsoring commercial banks, the RRBs' advances were more in the form of term loans and less for crop loans, consumption loans, etc. This raises apprehensions if the RRBs are not doing secure business by advancing for long-term investment purposes. The definition of weaker sections of the rural society, adopted by the RRBs too, is quite generous and broader than the one adopted, for example, by the cooperatives. A household with a net income of Rs. 2,000 per year at 1972 prices, excluding wage payments received by the members of the household is classified as weak.

To sum up this part, the RRBs have covered some of the areas where they were needed most and have purveyed credit overwhelmingly to small and marginal farmers, labourers and artisans etc. Still, they have left uncovered difficult, inaccessible and under-developed areas in hills and tribal regions, and the North Eastern sector. Even in the areas where the RRBs are functioning, the coverage of the relevant categories, has so far been extremely inadequate, even when the definition of weaker households is quite liberal. The RRBs have advanced mostly investment loans.

More important, the RRBs have been conceived as an instrument and a catalytic agent for ensuring the development of rural economy by providing credit as well as other facilities. It is here that inadequacies of this new institutional set up become glaring. The RRBs have become an extension and for some period, slightly cheaper version of commercial banking—cheaper to the sponsoring bank but not the ultimate borrowers. There is little evidence to suggest that as stipuated in the Act, they are providing any other facilities, except credit Because of their selective clientele and the well-deserved though narrower small-man appeal, the RRBs cannot become the agent of an alround rural development. The narrower approach of RRBs in terms of coverage of class of rural families though very desirable on other considerations, and their limitations to purvey

A Regional Rural Bank extends loans to nearly 16,800 marginal and small farmers.



only credit, without providing extension, inputs, advisory and marketing services, would put these institutions in extremely precarious position vis-a-vis of needs of rural growth and development. Unless some of these emerging demands on the credit institutions, are considered, the RRBs may fast graviate towards being a commercial bank branch catering particularly to the liberally defined category of weaker sections of the society.

The perspective and the challenges

As mentioned earlier, the Narasimham Working Group devised the RRBs as an answer to the problem of size and diversity that a country of continental size as India presents. The neat uniformity with which the RRBs have been set up in the country, does not justify this expectation of the Group. On the other hand, the cooperative structure, which includes within its fold, apart from a variety of functional societies, Primary Agricultural Credit Societies for plains, Farmers Service Societies for weaker sections, Large Size Multipurpose Societies for Tribals, reorganised primaries, Gram Panchayat Level Societies, Mini Bank type societies of Haryana, etc., have exhibited a remarkable flexibility and resilence to cater to the diverse needs of areas and population groups constituting rural areas. The move of the cooperatives towards multi-functional and single contact focal points and as nerve centres of multi-sided development, scores many steps ahead of the uni-purpose monolithic institutions like RRBs.

The integrated rural development as an approach and method to secure activity|sectoral and spatial integration would demand comprehensive rather than narrow institutions like the RRBs. The supply of inputs and marketing of rural products would constitute an increasingly important link in the chain of activities constituting rural development. In activities allied to and dependent on agriculture, which are labour using and land-saving,establishment of effective linkages with the supply of raw material and marketing of the produce would constitute even more crucial to rural development than the mere supply of credit. The District, Block and Village Production Plan would need an integrated system of service and support from various institutions. The involvement of local initiative, knowledge, expertise and experience not only in implementation but also in planning would not only be a "means" but an "end' in itself. In this fast changing scenerio of rural development concept and strategy, the RRBs, essentially a credit institution, may find its role a little out-of-tune and odd. These institutions to be effective have to orient themselves to coordinate and integrate their credit activities in this total effort. They have to lay greater emphasis on projecting their lending activity and persue backward and forward linkages. This is a difficult and challenging task which is exactly what makes it worthwhile to strive for. Unfortunately, cooperatives too, at the field level, inspite of the suitability and flexibiity of their structure, suffer from a number of constraints apart from the ever-enlarging shadow of overdues. With the advantage of hind-sight, one wonders whether the "Farmers Service Society" was not and is still not a better alternative to serve the diverse needs of developing rural India. Be that as it may and since we do not have the advantage of starting on a clean slate, it is hoped that RRBs would find their role more rewarding by integrating and coordinating their credit activity in the total comprehensive and multi-sided rural development effort. This is the demand of perspective that is now emerging out of overall rural development approach. In this perspective the candid recommendation of the Review Committee is that "......we have come to the conclusion that the RRBs are well suited for the purpose of filling up the credit gap and therefore, the programme for the establishment of the RRBs deserves to be accelerated. As referred to in an earlier paragraph, in as many as 182 districts, the DCBs are weak. The 48 RRBs cover 55 of these districts. To start with, the programme of establishing new RRBs may be implemented in the remaining 127 districts" deserves to be considered with more than usual caution. More thoughts need to be bestowed on how to enable the RRBs to find for them a place in the total rural development endevour with horizontal and vertical linkages with not only higher level credit institutions and perhaps more important service and developmental Government and local-self Government institutions. □

National Awards for Child Welfare

THE VALLUVAR Educational Society, Chitrakudi, Thanjavur District, Tamil Nadu has been selected by the Government of India for the National Award of one lakh rupees in cash for the best work done by the institution in the field of child welfare. The Award is accompanied by a citation

The National Award of Rs. 20,000 and a citation to an individual for the best work in the field of child welfare has gone to Smt. Anutai Vagh, Gram Bal Shiksha Kendra, Vikaswadi Kosbad Hill, District Thane, Maharashtra.

This is the first year of these awards instituted to mark the International Year of the Child.

Registered in 1953, the Valluvar Educational Society, runs schools, hostels for children of Harijans and denotified tribes; homes for children of denotified tribes and others; balwadis, creches etc. in Chitrakudi; Vellamperambur; Allur; Thiruvalampolil; Koonamangalam and Thanjavur in Tamil Nadu. The services rendered by this institution to deprived children belonging to Harijans and Denotified Tribes are commendable.

Smt. Anutai Vagh has been associated with Gram Bal Shiksha Kendra, Kosbad Hill, Thane, Maharashtra, since 1945 to serve the cause of education and welfare of the children of rural and tribal areas in Thane district.

Presently, Smt. Vagh is the Director of Gram Bal Shiksha Kendra and has conducted a number of educational experiments and innovations in rural and tribal areas and by dint of relentless personal effort, played a pioneering role in pre-primary and primary education of deprived children. □

19 DPD/79—4

Planning For Village Industries

Ganga Madhava Rao
and
Bepin Behari

IN ORDER to raise the living conditions of Indian villages from their traditional level of poverty it is necessary to mobilise the vital contributions of all sections of the population. The main responsibility for the development of village industries which is the crux of rural poverty vests primarily with the State governments and administrations of Union Territories. The First Five Year Plan Report itself emphasized their role in this regard. It was also suggested that the development of village industries should be regarded as important as the increase in agricultural production.

The Government have mobilised plan funds to the tune of Rs. 1426.16 crore during 1951—79 for the development of village and small industries. Of this, 46.46 per cent was included in the central sector and 53.54 per cent in the State sector including Union Territories. Actual expenditure on this sector of development amounted to only Rs. 1232.55 crore, of which 56.56 per cent was in the central sector and 43.44 per cent in the State Sector. During this period, the compound rate of growth of average annual expenditure on village and small industries amounted to 12.72 per cent per annum against 12.86 per cent per annum for the total plan. The rate of growth of per capita average annual plan expenditure on village and small industries was of the order of 10.62 per cent as against 10.80 per cent for the total plan. This indicator of secondary role to the planning of village and small industries is further reinforced by the fact that the proportion of the average annual expenditure on this sector of development to the total plan showed a continuous decline since the beginning of the Second Five Year Plan. The proportion of the village and small industries in the first plan amounted to only 2.1 per cent which during the succeeding quinqunnium increased to 4.1 per cent; during the third plan period it amounted to 2.8 per cent, in the three annual plans it accounted for only 1.9 per cent, during the fourth plan period it was of the order of 1.5 per cent and reached the lowest level of 1.3 per cent of the the total plan expenditure in 1974—78. Since the beginning of the Rolling Plan concept there has been a slight change in the trend : in 1978-79, the anticipated expenditure, if it actually materialsed, would amount to two per cent of the total plan expenditure, while the outlay for 1979-80 showed that the proportion would be of the order of 2.3 per cent. For the entire five years of 1978—83, the outlay suggested does not account for more than two per cent. The contention that the village and small industries has been assigned an outstanding role in the current Rolling Plan is not tenable. What we are actually doing is to find out the ways and means of reinforcing this sector development so that the country's problems could adequately tackled. The slight twist in the tre observed in the formulation of the Rolling Plan 1978-83 could at the best be taken as an expression intention rather than fact of achievement.

Ganga Madhuva Rao is Research Officer in Planning Commission and Bepin Behari is with National Building Corporation.

Expertise and Infrastructure at Centre

In the course of examining the causes of this ne lect, certain interesting facts come to our notice. the outset one is struck by the fact that the S Government and Union Territories were in the begi ning apportioned substantially higher funds than t amount sanctioned for the central sector outlay, b their performance has been consistently disappointi During the course of the second plan, 87.50 per ce of the plan funds for village and small industries w allotted to the State sector against only 12.50 p cent in the central sector, and 53.48 per cent in t State sector during the third plan period agai 46.52 per cent in the central sector. The actual e penditure for the State sector accounted for 40. per cent of the total during the second plan peri and only 38.26 per cent in the third plan peric Since then, the size of the State sector plans w somewhat reduced. Even during the Rolling Pl period, the State sector plans of the village and sm industries accounted for only 49 26 per cent of t total VSI plan; for 1978-79 and 1979-80 the sa accounted for only 33.92 per cent and 33.17 per ce respectively. The gradual reversing of the respon bility from the State governments to the centre such an important programme whose roots are cidedly in the dispersed villages requires serious con derations.

Justification for the accumulation of greater r ponsibility in the Central government may be due the desire of the Central government to acquire gre er control over the destiny of the teeming millions it could be explained by the increasing expertise ava able with them for executing such an important p gramme. From the point of view of execution of nationally approved plan, the Centre has certai gained expertise in spending larger sums of mon This has been due to the fact that the Centre within its jurisdiction certain organisations and ag cies which have their network of activities spr throughout the country through which framew much money could be siphoned to dispersed ar Reliance on these agencies has been the primary r son for the Central success in utilising the amount to their disposal. The State government do not h this infrastructure of institutionalised expenditure the magnitude possessed by the Centre though t are also endeavouring to set up such organisatic The level of expenditure however should not it be taken as a characteristic of successful executior plan objectives. The availability of fund is merely means for executing certain programmes for crea

an impact on the people. Approaching from this side of enquiry, even the Centre does not acquit itself very admirably.

The Central Government has been channelising the funds through the six boards/commission which were set up during the first plan period in order to give specialised attention to certain sectors of rural development. Six Boards, namely, the Small Scale Industries Board, All Indian Handicrafts Board, Central Coir Board, Central Silk Board, All India Handloom Board and the Khadi and Village Industries Commission were organised|reconstituted for fulfilling promotional requirements of their specific areas These organisations were constituted/reorganised during the first plan period.

Progress Achieved

The development of small scale industries has certainly made rapid strides during the last three decades Performance of this sector of industrial development has been universally appreciated. There were 2,47,528 registered small scale industrial units under the purview of Development Commissioner, Small Scale Industries and with respect of more than 800 items, these units have attained expertise and capabilities to deliver standard products. With a network of 16 Small Industries Service Institutes, 27 Branch Institutes, 41 Extension Centres, two Training Centres and five Production Centres, the Small Scale Industries Development Organisation provides technical consultancy, technical and managerial training, economic and statistical consultancy and information service, management consultancy, and internal and external marketing advice. An important aspect of this organisation has, at present, been to assist the rural industries projects, the rural artisans programme, entrepreneurial development programme and the recently organised District Industries Centres. As a result of the operations of Small Scale Industries Development Organisation, it has been estimated that more than 5.56 million persons were employed in this sector in 1976-77 and Rs. 12,000 crore worth of goods were produced. In 1977-78, the employment in Small Scale Industries including industrial estates amounted to 5 89 million persons and the level of production for both the registered and unregistered units was to the tune of Rs. 13,200 crore. But these industrial units are not necessarily located in rural areas; most of them are in urban and semi-urban areas and as such their impact on rural industrialisation could be considered only marginal.

The textile policy of the Government of India has substantially encouraged expansion of handlooms in the country. The Karve Committee estimated that there were two million commecial looms engaged in 1951 on cotton, of which about a fifth were idle. Average daily production of these handlooms was six yards and each loom worked for only 150 days in a year. The recommendation of the Karve Committee which to a great extent remained the backbone of governmental policy with regard to small and village industries during the last 25 years or so, radically altered the tetilxe production and its availability to the common man. An increase of outlay from a little over Rs. 11.10 crore in the first plan period to Rs. 59 50 crore in the second plan, and Rs. 103.17 crores in 1974—79, which for 1978—83 has been proposed at Rs. 244.70 crore in the handloom and powerloom sector has greatly facilitated the expansion of dispersed weaving in cotton. Even during the second plan period it was expected that the target production of looms would rise from four yards a day to 6—8 yards and instead of working for only 150 days in a year, they would work for 350 days. As a result of the vigorous steps taken by the All India Handloom Board, employment in handloom|poweloom sector amounted to 6.82 million persons in 1977-78 which by the end of the Rolling Plan period 1978—83 could increase to 10.61 million persons, and production level of 55,48 million metres in 1977-78 would reach, 76,000 million metres in 1982-83

The progress achieved in respect of handicrafts development during the plan period has also not been less significant. On the background of the situation when traditional crafts like handprinting of textiles including handpainting of fabrics and embroidery, artmentalware and woodwares, gems and jewellery, articles made of cane, bambo and willow, ceramic goods besides hand-knitted carpets were languishing prior to the setting up of the All India Handicrafts Board, the phenomenal expansion in the exports of these items is really heartening. The value of the production which was estimated at Rs. 550 crore in 1977-78 is expected to rise to Rs. 1,000 crore in 1978—83; the employment in the sector may rise from 1.82 million persons in 1977-78 to 2 42 million in 1982-83. Similar achievements have been made possible with regard to sericulture and coir productions as well. As a result of the various programmes of research and development initiated by the Central Silk Board, the production of raw silk which was 1.23 million Kgs. in 1951 increased to 3 69 million kgs in 1977-78 and is expected to rise to 6.25 million kgs by 1982-83. Employment which was of the order of 2.7 million persons engaged on part-time basis and 35,000 persons working full time increased to 3 6 million full-time workers in 1977-78 and by 1982-83 may amount to 4.4 million. The silk rearing being primarily concentrated in dispersed tribal areas has certainly made an important contribution towards rural industrialisation. The coir industry is concentrated in Kerala and a few other States. As such the setting of the Coir Board, on whose programmes the outlay was Rs. one crore in the second plan increased to Rs. 7.66 crore in the fifth plan 1974—79, and the Rolling Plan proposals amounted to Rs. 18.10 crore is not so of national consequence. Nonetheless, one could certainly infer that the setting up of All India Handloom Board, All India Handicrafts Board, Central Silk Board and the Coir Board have augmented the production and employment generation in their respective areas but the impact of Small Industries Board and the Khadi and Village Industries which though important in their own ways has not been as substantial for rural industrialisation as they were expected to make.

Attitude of State Governments

The planning efforts of State Governments do not exhibit the urgency of the problem needed in solving the rural poverty; they do not seem to incorporate a rational and effective strategy which could produce the desired results. The fact that the village and small industries sector in State Government plan proposals are not given adequate thought and importance is revealed by the total allocation of funds suggested for this sector and the composition of the schemes included therein. Under the assumption that the [illegible] requirements and availability of resources are [illegible]

known to the State Governments, larger funds were generally apportioned to the State Governments for village and small industries plan proposals but the expenditure used to be substantially lower than the outlay. Consequently, the outlays on the State sector plan for village and small industries were proportionately reduced after the third plan period, as explained earlier. The State Governments do not in fact seem prepared as yet for a massive channelisation of fund for the development of village industries programmes in their areas. During the period of the last thirty years or so, the State Governments should have acquired adequate expertise in plan formulation as well as administrative streamlining for effectively utilising the available funds for the benefit of the common man in their States. We shall have to accept the fact that the State Governments will have to take concrete steps with regard to their administrative structure before they could hope that planning for village industries in their States could ameliorate the appalling conditions of the rural poor.

The category-wise classification of various schemes of developmental programmes formulated by different States and Union Territories shows that the schemes included in many of the seemingly useful groups are not necessarily so. The three programmes viz. District Industries Centres, the Intensive Handloom Development Projects, and the Khadi and Village Industries, taken together amounted to 13-31 per cent of the total State sector outlay in 1978-79. It was proposed to increase to 16.02 per cent in 1979-80, and 17.10 per cent of 1978—83 proposals. The Handloom Intensive Project have done much good and they are expected to augment production and generate significant employment among the loom weavers. The District Industries Centres, on the other hand, are generally considered as still born babies. They do not have the direction of rural industries projects programme and they lack the necessary wherewithals to motivate village industries as envisaged in their charter. They thus have bad of both the worlds. The Khadi and Village Industries programmes in different States are very much disorganised and there is need for streamlining their activities before the sector could make any significant impact on rural industrialisation. But the government have been luke-warm in taking effective action in this regard and to coordinate its activities with other agencies working in rural areas. Unless this is done and different organisations are saved from pulling in different directions, large proportion of expenditure on these programmes would continue to be infructuous making merely marginal contribution.

The expenditure on building construction under which provisions for industrial and office staff quarters and workers' housing schemes are included, accounted for a little over 11 per cent of the total village and small industries outlay. In 1978-79, it amounted to Rs. 9.83 crore, while the proposals for 1979-80 were for Rs. 28.93 crore and in 1978—83 for Rs. 177.90 crore. Recent surveys have revealed that many of these housing schemes have not given the advantage to the group of people for whom the schemes were primarily intended. The actual expenditure on Administration was of the order of Rs. 6.07 crore in 1978-79 and proposals for 1979-80 were for Rs. 15.57 crore and in 1978—83 for Rs. 81.97 crore which shows that the State governments have no sense of proportion; this also shows that they are eager to push forward the pet (political) proposals indirectly under the cover of accepted major developmental heads. An examination of locations and the purpose for which these building constructions have been suggested will show that many of them do not have any direct impact on production augmentation or employment generation. Many of these are not even located in rural areas. These may generate Keynesian multiplier effect whose effect on village industries can be felt as the ripple of the wave.

Many schemes have certainly been included which have meaningful linkages with the production potential of rural industrial establishments. Schemes to supply machinery and equipment, generating sets, handtools for artisans, arrangements to set up raw material depots, and selective approaches to improve grainage, seeds and mulberry farms to help sericulture have made significant strides. These schemes have been formulated after careful deliberations of the concerned parties. But one is not sure why identical programmes have been included in Central and State sectors both. One is not sure why these activities undertaken by the respective State governments along with those of the specialised commodity boards do not form an integrated development programme. The provision of production aid can be effective only when it is intended to satisfy an identified need.

To satisfy identified need

Items under training programmes and provisions under production aid such as dye centres, testing facilities, common facility services which suffer from limitations of providing facilities are either not wanted or have low priority among the relevant schemes. What is needed is a careful examination of the places where these schemes are going to be operated and the beneficiaries who are expected to benefit from schemes Unless the beneficiaries are indentified, the State Governments' proposal for various institutions and organisations seem to be initiated merely for "demonstration effect" and for prestigious purposes. To eschew such a tendency, it is necessary as a first step to survey the area of industrial concentrations where such assistance is really needed, and second, to decide the precise magnitude and characters of the specific facility to be arranged for. The State Governments are expected to undertake such studies before formulating their specific proposals but whether they do so or not is anybody's guess. Costly and sophisticated electronic testing centres in rural and semiurban areas if their usefulness is not rightly evaluated may be wasteful and infructuous. It is the responsibility of the Planning Commission to scrutinise the plan proposals with great care and expert knowledge, but there is a general feeling that these are not performed with that attention. If so, this should be eliminated. The responsibility of Planning Commission is much more than merely file pushing, specially with regard to rural industrialisation and for that purpose persons with great skill, training and experience should be appointed who have insight into the task involved in formulating right plans for village industries. The pattern of outlays on different groups of programmes included under village and small industries reveals that there is much conventionality and less of radical thinking.

To make the planning process effective, it is necessary that the Planning Commission and the concerned Departments considered the problem seriously. □

Drought Situation in India

An analysis

S C. Tripathi

THE Agriculture and Rural Development have given a place of supreme importance in the Sith Plan which aims at imparting stability in agricultural production. The importance of agriculture in India can hardly be over emphasised as it provided the means of livelihood to 70 per cent of the working force in the country and the necessary raw material to industries. Despite all efforts made to improve irrigation, increased production per unit intensifying agricultural research, as also, having distributed about one lakh acres of land to the landless, our hopes of seem to be eluded in the current year by the failure of rains over a widespread area in the country. The production of foodgrains in India during 1977-78 was 125.6 million tonnes which was anticipated to rise to 127 million tonnes during 1978-79 and the all-India target for 1979-80 is placed at 131 million tonnes. The transformation of inefficient and unproductive farms into capital intensive profit oriented viable farming enterprises operated at high level of sophisticated technology and farm management has considerably picked up in the country. Still, land ownership is not principally a means of maximising output by and large but a source of political power and social prestige. In fact, this factor has been responsible for showing a low rate of output even, in the face of sharply increased demand for food, because, the so called scarcity of resources is structurally determined. In order to improve the situation massive efforts are underway for transferring technology from the laboratories to the field in a manner easily understood by the farmers.

The green revolution in our country largely covered the irrigated areas with a package of improved practices and high yielding hybrid seeds and there have been an encouraging development of the wheat revolution 'apart from that in Punjab and Haryana' in parts of North Eastern—Uttar Pradesh, Orissa and West Bengal. It need hardly be emphasised that in spite of the spectacular results achieved so far in India in the production of foodgrains, the increase has been less in proportion to the population growth per year. Our country has enough land, water, labour, and adequate climates to produce enough food for the population and even for export, and the techniques for achieving this are already being followed, but human management has no control over physical environment and more so on the vagaries of the monsoon. It is true that the destruction of forests, overgrazing of lands and the continued cultivation of the depleted soils are responsible partly for the unusual droughts and floods. In other words the drought and floods are partly man-made. In a tropical country like India research and technical assistance tend to be neglected due to variations in climate over different regions, as also, lack of proper extension machinery to transform the technology into effect on the farms. Also in particular, the utilisation of land, water resources and of the labour force is conditioned by the social, economic and political structure. All this means that even though resources are not scarce in India they are poorly managed. Our country is bedevilled by a high concentration of land ownership—2/3rd to 3/4th of the existing agricultural land being controlled by a handful of large land owners including plantations. The impact of the unequal control over resources in sectors allied with agriculture and distribution of inputs other than land, water and labour i.e. credit, fertilizers, machinery, seeds, technical assistance and research can hardly be overestimated. In the circumstances, the overall utilisation is obviously determined by the practices of the land monopolising cliques who determine the overall performance of agriculture.

Crop production has come to be used as a measure of the country's agricultural performance as it normally accounts for 80-85 per cent of the value of India's total agricultural output and because the data on output of livestock and livestock products are not available over a series of years. With the accent on the strategy in agriculture shifting from attaining the increases in output to an orderly distribution of the increased output to the population, in the various regions of the country, the need for agricultural development has become peramount since the value of output in agriculture continues to be around 45 percent of the national income. But in agriculture, the increase in production is seldom realised uninterruptedly. While seasonal factors have affected the production levels the general trend in the production of various crops has been upwards and the fluctuations from year to year have on the whole been relatively smaller than in earlier years owing largely to the potential for increased production being built up through the technology sparked by the high yielding varietires programme.

During the current year in spite of the big boost to minor irrigation the failure of rains over large parts of the country have marred to a great extent the growth of kharif crops. It is estimated that the damage to crops has been of the order of 33-50 per cent in Andhra Pradesh, 41 per cent in U.P., 21-37 per cent in Madhya Pradesh, 29 per cent in Punjab, 21 per cent in Haryana; 30 per cent in Bihar, 10-30 per cent in Orissa and 68 per cent in West Bengal. Almost

S C Tripathi is Joint Director in Planning Commission

in a dozen States rainfall as deficient by 12.79 per cent. A high-level Conference called by the Minister for Agriculture and Irrigation has evolved a three-pronged programme to combat most serious drought conditions since 1974-75. The strategy to be adopted will be to save the existing kharif crops, augment Rabi production and arrange equitable distribution of grains during this period. The measures for saving kharif crops will be to utilise whatever amount of water is available for irrigation and the State Governments have been asked to give the highest priority to power supply for pump-sets and to fertilizer factories in their States. It was observed that although the rains have failed in many areas the irrigation reservoirs had in store 70 million acre-feet (MAF) of water against the capacity of 110 (MAF). This was considered satisfactory in view of the fact that 60 per cent, of irrigation was done from the reservoir waters. The remaining irrigation was done by canal water. The position in this respect too was satisfactory. Due to lack of rains the danger from plant pests to the crops was not there. However, plant protection measures were being accelerated to save the standing crops and prepartions were afoot for augmenting rabi production by speeding up supplies of fertilizers, seeds and credit.

foodgrains seasonwise since 1964-65, a year of go production, in the recent past is indicated below.

The improvement in agricultural production sin 1975-76 had made us somewhat complacent abo continued rise in food production and we had reso ted to partial return of foodgrains especially whea imported from USSR and other countries. Had th not been done the buffer stocks of foodgrains wou have been much higher than the present level of 2 million tonnes as on 1-9-1979. Anyway, it is hop that a review of the situation which is under wa regarding the availability of foodgrains and its distr bution in the entire country to the public distributic system would meet the shortfalls in the various State There might be a marginal need to import foodgrair if the occasion so demands. There should not be an difficulty in this when we have a comfortable accum lation of foreign exchange reserves. The food distr bution system has to be so organised as to meet th needs in scarcity areas and it is welcome that th Railway Board has given priority to the movement c food and fertilizer and is prepared to consider st greater priority in this regard. Alongside these me sures cropping in land where some moisture was ava lable is being undertaken to bring down the shortfal

(Million tonnes)

Year	Cereals			Foodgrains		
	Kharif	Rabi	Total	Kharif	Rabi	Total
1964-65	62.1	14.8	76.9	65.6	23.7	89.3
1965-66	49.4	12.8	62.2	52.4	19.75	72 0
1966-67	52.1	13.7	65 8	54.6	19.7	74 2
1967-68	62.9	20 0	82.9	66.1	28.995	95 0
1968-69	62 5	21.1	83.6	65.8	28.2	94 0
1969-70	58.9	28.9	87.8	62.4	37.1	99 5
1970-71	65.0	31.5	96.6	68.9	39.5	108 4
1971-72 . .	58.9	34.7	93.6	62.0	42.7	104.7
Percentage increase in 1971-72 over						
(1964-65)	—5.3	+135.00	+26.0	+5.5	+79.7	+17 1
1974-75	53.20	36.61	89.81	59.10	40.73	99.83
1975-76	69.45	38.54	107.99	73.39	47.65	121 04
1976-77 (R) . . .	62.634	37.171	99.805	66.526	44.640	111.116
1977-78 (R) . . .	73.61	40.29	113.81	77.75	47.85	125.60
Percentage increase in 1977-78 over						
1975-76	5.99	4.30	5.39	5.94	0.42	3.77

(The years 1971-73 have been left out owing to being drought years)

Even in the year 1974-75 which was a bad year for agriculture, rabi production had actually registered an increase over that in the previous year although the kharif crop had suffered heavily. In 1974-75 kharif production of foodgrains was 59.1 million tonnes compared to 67.8 million tonnes in the previous year. The rabi production went up from 36.8 million tonnes in 1973-74 to 40.7 million tonnes in 1974-75. There is, therefore, no cause for anxiety as the rabi production which has been more stable and has also been showing signs of improvement, can to a great extent mitigate the shortfall in foodgrains production. Therefore, the situation demands that the rabi crop although a smaller one as compared to kharif should be given particular attention by virtue of its immunity from weather aberrations and its proven potentiality for higher productivity The pattern of production of

Pulses and oilseeds are being sown in areas where paddy had failed for want of rains or other kharif crops washed away in floods such as in western Rajasthan, Vidharbha and Saurashtra. It is understood that adequate preparations and gearing up of the administrative and political machinery are already under way to fight the current widespread drought in the country. The present drought should however not hold back India's grain storage construction programme. The country has greater confidence to face the drought this time than before because of the comfortable stocks of grains with the Government. It may be suggested that the farmers might as well be provided incentives to encourage building their own private sector grain storage facilities The food situation in the country can hardly be said to be grim as reported in certain sections of the press. □

Recent Monetary Measures to Control Money Supply A Study in Retrospect and Prospect

Amitava Mukherjee

Production and prices are directly proportional to the money supply. The Reserve Bank of India has announced recently some measures to arrest the money supply with the hope that it will stabilise the economy and contain inflation. The author argues that lowering the credit limits and enhancing the rates will have no impact on the determinants of Monetary base viz. currency ratio, net credit to the Government and the foreign exchange assets of the Reserve Bank. Increase in the rate of interest payable to the deposits has the effect at best of pushing up the the Reserve Ratio whereas the currency ratio mav fall, he adds.

THERE has been in recent decades a revival of faith in money as an important factor affecting the behaviour of an economic system. Production and prices are seen to depend on monetary factors, and it is in this perspective that the Reserve Bank of India has sought to arrest the growth in money supply by a series of stringent monetary measures. It is worth evaluating the effectiveness of the measures in achieving the objectives aimed at, in the light of our past experience.

Measures of the Reserve Bank

The Reserve Bank has proposed two sets of measures :—

(a) (i) It announced that the present credit limit of all borrowers (with limits of Rs. 25 lakh and above) be slashed down to 80 per cent of the peak level drawing for the past two years ending 30-6-79, or of the present limit whichever is lower;

(ii) The Banks may also increase on an average 3 per cent of the lending rates for borrowers of Rs. 25 lakh and above. These came into effect on 23-8-1979.

(b) The second set of measures imposed by the Reserve Bank with effect from 13-9-79, comprise of —

(i) an increase in the rate of interest payable on deposits by a maximum of 1 per cent for various forms of deposits;

(ii) an increase in the rate of interest on loans have been enhanced upto 19 per cent in case of all borrowers.

Amitava Mukherjee is in the Management Services Department of United Bank of India, Calcutta

The Determinants of Money Supply

There are basically two determinants of the Money Supply—the Money Multiplier and the Monetary Base which the monetary measures are supposed to influence to control money supply.

The Money Multiplier is determined by the currency ratio—defined as the ratio of currency held by the public to total money supply—and by the Reserve Ratio—defined as the ratio of reserves held by the Commercial Banks to total deposits.

The relationship between Money Multiplier, the Currency and the Reserve Ratios are shown thus .

$$k = \frac{1}{c + (1 - c)r}$$

where

k = Money Multiplier

c = currency Ratio

r = Reserve Ratio

(see Table I for a derivation of the Money Multiplier)

The Monetary Base may be conveniently defined thus :

$$M^B = F + C_g + C_b + O$$

Where M^B = Monetary Base

F = Foreign Exchange Assets

C_g = Net Govt. Borrowing

C_b = Net Credit to Banks

O = 'Other Deposits'

Table I

Ratio of Currency to Money Supply, Ratio of Total Reserves, Total Deposits and Money Multiplier

Periods	Ratio of Currency to Money Supply		Ratio of Total Reserves Supply to Total Deposits		Money Multiplier
	Average	Aver. Dev.	Average	Aver. Dev.	Average
1951-52 to 1956-57	0.696	0.006	0.088	0.021	1.383
1957-58 to 1962-63	0.712	0.012	0.078	0.009	1.362
1963-64 to 1968-69	0.663	0.022	0.064	0.001	1.468
1969-70 to 1974-75	0.596	0.023	0.069	0.008	1.596

The Past Experience in India

(a) Impact of the Currency and Reserve Ratios on the Money Supply : Over the twenty-five years period spanning from 1951 to 1975 the Currency Ratio had a greater impact on money supply than the Reserve Ratio. The partial correlation coefficient between the Currency Ratio and Money Supply was found to be—0.94274, and that between the Reserve Ratio and Money Supply was found to be—0.35925. These coefficients are significant at 0.001 and 0.1 levels of significance respectively.

The foregoing is succintly set forth by the regression equation of money supply on Currency Ratio and Reserve Ratio, which reads as follows :—

$$\overset{s}{M} = 0.4027 - 0.5164c - 0.2548r$$

$$(15\ 299)\ (-12.953)\ (-1.7641)$$

$$R^2 = 0.8992$$

$$\overset{s}{M} = \text{Money Supply}$$

(figures in the parenthesis are the t values)

The co-efficients of c and r are significant at 0.001 and 0.1 levels of significance respectively. This indicates that Currency Ratio had a greater impact on Money Supply than had the Reserve Ratio.

(b) Impact of the Money Multiplier and the Monetary Base on Money Supply : Once the impact of c and r on $\overset{s}{M}$ is determined, it would be useful to assess the impact of Money Multiplier and the Monetary Base on Money Supply—$\overset{s}{M}$. The partial correlation coefficients between k, $\overset{B}{M}$ and $\overset{s}{M}$ were calculated. It was found that over the period 1951 to 1975, the partial correlation between k and M was 0.73428 whereas the partial correlation coefficient between $\overset{B}{M}$ and $\overset{s}{M}$ was 0.99434 over the same period.

To summarise the effect of k and $\overset{B}{M}$ on Money Supply a regression was run. It was found that

$$\overset{s}{M} = -41145 + 0.28145k + 1.4318\overset{B}{M}$$

$$(-5.6)\quad (4.95)\quad (42.90)$$

$$R^2 = 0.9988$$

(figures in the parenthesis are t values)

It is seen that the co-efficient of k and $\overset{B}{M}$ are significant at 0.001 levels of significance.

It is apparent that the Monetary Base had a greater influence on the Money Supply than the Money Multiplier.

Indeed the preponderant influence of $\overset{B}{M}$ in determining the Indian money supply is even better seen when a regression of Money Supply on Monetary Base is run. The regression equation reads as follows :—

$$\overset{S}{M} = -4974.7t + 1.5865\overset{B}{M}$$

$$(-8.399)\quad (93.341)$$

$$R^2 = 0.9975$$

(figures in parenthesis are t values)

The coefficient of $\overset{B}{M}$ is significant at 0.01 levels of significance. The value of R^2 clearly indicates that changes in Monetary Base alone, is capable of explaining most of the variations in Money Supply.

(c) Causes of Changes in Monetary Base Though, the Monetary Base had a preponderant influence in determining Money Supply, it is natural to investigate : what caused changes in the Monetary Base ?

It is apparent from the Table II that though there have been occasions when the Monetary Base decreased or increases in the Monetary Base have been slowed down, yet it has over the period 1951 to 1975 increased consistently. This increase in the Monetary Base by and large, has been caused by increase in net credit to the Government, also called "deficit financing". Changes in all the elements affecting Monetary Base, except net credit to the Government, have been marked by rise and fall. Net credit to the Government has only portrayed a consistent trend —always increasing. It has, therefore, influenced the rise in Monetary Base, more than any of the remaining factors. This is particularly true in the years 1963 to 1975.

There have been occasions when the Monetary Base decreased, viz. the years 1951-52, and 1952-53, caused by a sharp fall in the foreign exchange assets. There have also been years, viz, 1956-57, 1957-58 1961-62 and 1968-69, when the rate of increase in Monetary Base fell. All these falls in the rate of

Table II

Year	High-Powered Money	Money Supply	Average Multiplier
1951-52 . .	14130	18737	1.326
1952-53 . .	13107	17521	1.336
1953-54 . .	13303	17650	1 327
1954-55 . .	13889	18499	1.332
1955-56 . .	15372	20488	1 333
1956-57 . .	16650	22224	1 335
1957-58 . .	17526	23341	1 331
1958-59 . .	18210	23945	1.315
1959-60 . .	19598	25510	1 302
1960-61 . .	21857	25136	1 282
1961-62 . .	22140	28439	1 285
1962-63 . .	23881	30981	1.297
1963-64 . .	26111	34753	1 331
1964-65 . .	28270	38660	1.368
1965-66 . .	30430	42365	1 392
1966-67 . .	32731	46406	1 418
1967-68 . .	34720	50081	1.443
1968-69 . .	37660	54260	1 441
1969-70 . .	41511	60106	1 448
1970-71 . .	45770	67292	1 470
1971-72 . .	50451	75573	1 498
1972-73 . .	55310	85560	1 547
1973-74 . .	67761	100570	1 484
1974-75 . .	78340	111941	1 547

increase in Monetary Base, admit of the explanation that they were caused by either a fall in foreign exchange assets or by a fall in the rate of increase in the net credit to the Government, or by some combination of the two.

The net picture that thus emerges is that the changes in Monetary Base were governed primarily by net credit to the Government, and to an extent by the foreign exchange assets. This analysis is further reinforced by the partial correlation coefficients between Monetary Base, and the factors affecting the same, which are reported hereunder :—

Partial Correlation Coefficient between	The Co-efficient	Level of Significance
H and F . .	0.8190	0.01 level
H and C .	0.9731	0 01 level
H and C_b^g .	0.2312	Not significant

(d) The Ratio Decidendi :

From the above analysis the following facts emerge :—

(i) That the Monetary Base had a prepondent influence on the Money Supply so much so that the former alone is capable of explaining most of the changes in the latter over the period 1951 to 1975.

(ii) That the Money Multiplier—and therefore the Currency Ratio and the Reserve Ratio—had only a honorary role to play in determining the Money supply.

(iii) That the Currency Ratio had a greater impact on the money supply than the Reserve Ratio.

(iv) The Net Credit to the Government basically dictated changes in the Monetary Base. The foreign exchange assets component also has a significant impact in this regard.

An Examination of the Measures

An examination now of the efficacy of the measures taken by the Reserve Bank in the light of the foregoing would be particularly rewarding.

(a) The first set : It is manifest that the first set of measures taken by the Reserve Bank, will only affect the Reserve Ratio. Curtailment of the credit limits of big borrowers (with limits exceeding 25 lakh) and increasing the lending rate of interest would leave the commercial banks with greater reserves, and therefore the Reserve Ratio would rise.

It will have absolutely no impact on either the Currency Ratio, or the net credit to the Government or the foreign exchange assets of the Reserve Bank—the latter two being the principal determinant of the Monetary Base The measures will have therefore, no impact on the Monetary Base which has the reponderant role in determining the money supply.

(b) The second set of measures, is presumably directed to increase deposits with the Commercial Banks and at reducing the credit limit utilization by borrowers owing to higher interest rates (with credit limit exceeding to 10 lakh). These will have the effect a best, again, of giving an upward thrust to the Reserve Ratio since reserve holdings of Banks may rise, and the Currency Ration may fall as the public may be allured by the higher rate of interest to increase their deposit holdings vis-a-vis their currency holdings

This set of measures, will have absolutely *no* impact on the Monetary Base, and on its two principal determinants—the net credit to the Govt. and the foreign exchange assets of the Reserve Bank.

Indeed it is very doubtful if at all this *second set* of measures will have any perceptable impact on either the Currency Ratio or the Reserve Ratio, so as to bring about a change in the Money Multiplier, to an extent that its impact in meaningfully controlling the money supply, would be significant.

General Comments

The increase in the interest rate of deposits, may not be capable of causing a fall in even the *Currency Ratio* (via increase in the Bank deposits) because savings being very low in an underdeveloped country like India, deposits are governed at this stage of the Indian economy more by institutional factors and not by the rate of interest offered on Bank deposits. Moreover, in the context of nearly 31 per cent rate of inflation p.a., a movement by big savers from deposits to real estates, bullion and jewellery etc. may be more marked now than even before. Increasing the rate of interest offered on Bank deposits by a maximum of 1 per cent over what was being offered previously, in the face of 31 per cent p.a. rate of inflation, slowly increasing money income and rapidly falling real income. is not a meaningful proposition.

The rise in the rate of interest on loans and advances may not also bring about any increase in the *Reserve Ratio*, because investment in this country is interest inelastic. Big borrowers would, at least, in the short run, prefer to minmise their loss by paying the higher

... by reducing their production. This is particularly true when there is no ceiling on the price line. The

Table III

Changes in the High-Powered Money and the Factors affecting the Same

Year	H	F	Cg	Cb	Other Factors
1951-52	—280	—540	20	130	110
1952-53	—740	—750	230	—50	—170
1953-54	360	170	50	—10	150
1954-55	910	300	550	100	—40
1955-56	1530	240	1230	230	—170
1956-57	1020	—1210	2620	610	—1000
1957-58	580	—3280	4300	—460	20
1958-59	940	—1110	3170	50	—1170
1959-60	1370	460	—250	270	890
1960-61	2060	—280	—1840	680	—180
1961-62	770	—620	1610	—120	—100
1962-63	1640	—670	2240	2400	—170
1963-64	2490	180	2660	—200	—150
1964-65	1990	—110	2020	560	—500
1965-66	2510	—580	3150	—40	—20
1966-67	2090	—330	3010	—60	—530
1967-68	2340	—150	2210	—430	—150
1968-69	1950	890	680	840	—460
1969-70	4210	3070	1410	830	—1100
1970-71	4460	2120	2040	810	—490
1971-72	4680	1380	3200	630	—530
1972-73	4850	320	3920	610	—100
1973-74	12650	—280	10500	3320	—1090

borrowers are fully alive of their capacity to shift the incidence of costlier capital on to their buyers in the total absence of a price control. Furthermore, holding funds at their disposal by paying a higher rate of interest on bank borrowing is more prudent since alternative sources of borrowing are either much more expensive or are nonexistent.

Summary of Findings and Predictions

The findings from the above may be summarised as follows :—

(i) The cut in the credit limit will not affect the Monetary Base (including the net credit to the Government and foreign exchange assets) which is the principal factor determining the Indian Money supply.

(ii) The increase in the interest rate may not bring about a significant change in the Currency Ratio and the Reserve Ratio, so as to significantly change the Money Multiplier, and hence in effecting a contraction (via the Multiplier) of the Money supply. In any case the Money Multiplier plays a secondary role in the determination of the Money supply

(iii) With the measures undertaken by the Reserve Bank leaving the Monetary Base untouched, with no control on the price level, and with a budget which envisages during the current financial year a deficit of nearly Rs. 1,350 crore (approx.), the largest deficit ever, the monetary base would continue to increase and the increase in money supply will continue largely unabated. □

Human Approach To Education

M. Vidyasagar

MERE sowing does not ensure bumper harvest. So also a child does not become a responsible citizen by age alone. Translation of a child's aspirations into reality makes him worthy of himself and society. Education expands one's perspective towards a better way of life. The more the educational standard is, the more civilized will be the society But the purpose of education today appears to have narrowed its definition itself What one understands today of education is to compete in scoring marks that pave way for his job prospects. Gone are the days of ancient India when education through Gurukulas taught people a way of life and not mere livelihood. Today if a person scores a thirty five per cent and does not know the rest of sixty five per cent of his syllabus, he is awarded a degree and is eligible to get a job. The utility of his education ends there. The collective result of this change in the goals of education is a mass production of poor degree holders suddenly thrown into an array of social system. Some get lost and some mercilessly crush others.

Positive Values

India has no dearth of the positive value systems that can be imparted and made to be practiced. It cannot be denied that our country over did it in the past. Our ancient scriptures speak in volumes for the necessity of toleration, accommodation, and accumulation. Our country did practice these values but never lost her identity. Infact only India could produce Buddha, Ashoka, Vivekananda, Gandhi and Nehru. All of them were the beacon of lights to the whole world in showing the value of peace and coexistence. They could prove that it is not a weakness to follow those values. It transcends the basic animal nature in a man to look for others outside his own self. A little adjustment here and a little allowance there in one's daily life will solve many agitations, hartals and bandhs today. The values like this are not philosophical though they sond so. They are practicable in our day to day life.

A value oriented and ideological approach to education instead of merely a supefluous syllabus to students is the need of the hour. Along with a lesson of pollination in plants, a little understanding of what is society will go a long way in solving the social pathology we see today.

Foundation at Primary Stage

The concept of collective progress through individual education has to commence from the formative age of persons. And the foundations of this training are laid during the primary and secondary level of education. More than 80 per cent of children in their formative stage in this respect are in rural areas. Therefore, improvement in rural education is most vital and crucial for nation's build-up. Unfortunately the political ideologies have been tinkering with altogether a different discipline like education since a long time. Education, particularly at primary and secondary level is a delicate job from the point of view of teacher as well as the pupil. As such it requires a human and sociological approach rather than complicated political and beauracratic manoeuvre.

Most of our 2500 lakh children are still 20 kms away from hospital to cure their running noses. They are still squatting on mud floors to learn alphabet and shiver in cold with half naked bodies. Less than three per cent of annual budget at centre is allocated for education and out of which only 30 per cent is spent on primary and secondary education. While 82 per cent of the children in age group 0-14 live in rural areas, 90 per cent of the total expenditure on education in the country goes to urban children. No wonder, with this planning why the bulk of the children are what they are today. Sixty per cent of them are illiterates. The pompously declared citizens of tomorrow do not know that they are entitled for a better life. A close look at a group of children will testify to this situation.

With the commencement of local self governments along with the Community Development Schemes, the Panchayat Samities or the Community Development Blocks have become the potential administrative units for education in rural areas. The state boards of education make academic policy making and conduct examinations in addition to releasing grants to Samities. Thus the rural education is totally under the control of Panchayat Samitis.

The President of the samiti in consultation with Block Development Officer and the Education Extension Officer decides and executes the decisions taken at the monthly meetings. Recurring and non-recurring expenditure, allotment of funds to the individual schools, implementation of new proposals are all sanctioned by the president. Appointments and transfers of the staff are made in the name of the President. The funds are drawn from the contingency grants of the District Education Office. Sometimes the salary disbursements also are routed through the Samiti. It can be seen that the educational planning and administration is totally in the hands of the President of of the Samiti who is basically a political leader representing democratic norms and not necessarily with a background in educational or academic disciplines. Naturally political influences in various aspects of his administration cannot be ruled out.

With the background on primary education, a study of the education in Udayagiri taluk in Andhra Pradesh was conducted and is presented here.

Profile of Udayagiri Taluk

This area was once a flourishing sub-capital of Kakatia and Vijayanagar empires. Now it is unofficially declared a backward zone. Essential services like

M. Vidyasagar is investigator in the Office of the Registrar General of India, New Delhi.

transport and communication facilities are meagre. Hardly 25 of 300 villages are connected by bus to the nearest towns. Rocky terrain and very low rain fall do not facilitate any improvement in irrigation. Only 17 per cent of the villages are electrified. The taluk is divided into two blocks or Panchyat Samitics. Out of the two, the Udayagiri block covers a population of about one lakh distributed in 100 villages. As on June 1978, there were about 178 primary schools upto fifth standard, 12 upper primary schools upto 10th standard and one Junior college for intermediate. Out of the 190 total schools, as many as 150 primary schools were being run by a single teacher only. About 15 schools had no teachers. As many as 150 schools had no building worth its name. Most of the primary schools had no equipment and furniture, with the result the child developes aparthy and indifference towards education, and lacks goals in their life. That is the formative age when they are supposed to develop sound mental and physical facilities. Without aspirations and set objectives they are growing in astray. It is in this connection that a cross section of children are studied and narrated as below Names are changed.

Gopal : Age 14 years. Farther is educated and a qualified doctor, not practicising. The boy has five brothers. Parents never set up a stable family Gopal and his brothers were mostly brought up by his uncle. a village Karanam (Patel). He studied upto seventh standard and joined junior polytechnique this year. His school was six kms away from the village. That was one of the reasons why he was highly irregular in attendence till he passed seventh class.

Gopal never liked his teachers. He had no interest in lessons. He was continuing studies because of compulsion and for a job in future.

Govind : Age 13 years. Dependent on uncle who was a priest. Economically very poor. Studying VII standard at another village staying at maternal uncle's house. School was 5 kms from the residence. Prepares own food Covered the distance by foot starting at 7 a.m. and returning by 7 p.m.

He felt present arrangement of schooling very strenuous. Interested in Telugu and English Subjects. Very often watched mythological plays. Aspired to be a teacher after 10th class. Father wanted him to be a Karanam.

Obulesu : Age 12 years, Lived with parents. Father was a petty contractor. He was in sixth class in a School six kms away. He used to go by bus.

He was found to be very irregular to school. Frequent delays in the arrival of bus resulted in abstaining from school. If he reached late, he was punished. To avoid punishment he very often abstained from school without the knowledge of parents. He was aggrieved that his teachers did not understand the difficulty of distance and transport failure. He did no like his father's profession. He was sore with the village munsif who usually fell back on him for some minor errands on way to school This also resulted in his reaching school late. He aspired to be a teacher in his own village

Murli: Age 15 years Studying eighth class. A drop out but resumed studies in 1978 at a school 15 kms away Staying with uncle He covered the distance partly by foot and partly by bus. He continued to be irregular to school as he was before. He did not have any interest in studies. Wanted to become a cinema projectionist. He learnt this job from a friend who was the operator of local cinema theatre. He was all against his parents who compelled him to go in for education though he wanted to earn by joining cinema halls.

Kala Saheb : Age 13 years. Father was a mason died when a working roof gave away. Kale along with his mother now depends on his uncle, a tailor. Studying seventh class, in a christian missionary residential school at Udayagiri. Boarding and lodging were free Economically poor. Despite difficulties, he had no break so far in education.

He was interested in all subjects but no teacher was good. They were very harsh. Hostel conditions reminded Dicken's "Do the boy's Hall". He was served very limited coarse food. He shared a 10X10 room with his class mates. The school prohibited games and sports. He aspired to be a doctor.

Balamma : Age 11 years. Father was a labourer She stopped her studies when she was in fifth class. At that time a separate school was started in that village exclusively for Harijans. Being a Harijan she was transfered to the new school, located in Harijan colony. However, no teacher took up the post, because of social and domestic factors. After a couple of months she sought to come back to the old school as the new Harijan school remained unmanned but she was refused admission. Frustrated and fed up, she discontinued her studies. She was not able to go to other village for education. She was nevertheless, prepared to continue her studies if she was readmitted. Her parents were also eager.

She was very bright and intelligent and had ambitions to go up in life. But she was depressed as she had been deprived of her career by the school administration.

Separate School for Harijans

A novel feature in the samiti was that about 90 schools had been started exclusively for Harijans. These primary schools were located in the Harijan hamlets. All the eligible Harijan students were enrolled in these schools and were not admitted in the common schools of the concerned village. The purpose was to give a boost in educational facilities to Harijans.

However, this attempt had totally misfired. No teacher was prepared to work amidst Harijans either because of personal reservations or due to the unhygienic surroundings. No single school was reported to be functioning well The result was those few Harijan students interested in studies were also discontinuing because there was nobody to teach them Nor they can join schools where teachers were there since rules did not permit.

Drawbacks and Effects

The literacy rate of this region in the period 1961—71 had gone up only by about three per cent. It is evident that there are some maladies stalling the progress of education in this block.

(1) The basic sanctity of education is marred by irregular administration owing to the political leadership. Unless the education is delinked from local selfgovernments the situation may not be brought on to the right track. The state boards and district education departments should directly handle the primary and secondary education in rural areas on par with the college education. Beauracracy is better than brains fuctioning without concepts.

2. Frequent transfers of teachers appears to be serving the only purpose of rewards and punishments. The

teachers are always under the grip of constant fear as to when and where they will be posted. Frequent shifts are leading to separation from their families, dislocation in their domestic lives and waste of time in settling in new places. It is reported that many of the villages do not have minimum facilities of stay for the new teachers posted. The teachers have to travel sometimes more than 10 kilometres to and fro to their schools under very odd circumstances and timings.

The overall effect is the severe mental stress to the teacher. He cannot devote and bestow much attention on his pupil. The ideal primary relationship between the teacher and the taught has been disintegrating as teacher is more preoccupied with his official or personal worries.

Noble profession as it requires, the teacher should be left with peace and stability if not better living conditions. Then only he will make his student a responsible citizen.

3. Filling up of vacant posts should not be postponed. There is already an inherent apathy in the rural social structure. This negative attitude towards education will be further aggravated if the public find schools without teachers.

4. Separate school for Harijans is a quixotic idea. It only creates more social disharmony. and caste polarisation. Failures in getting teachers to these schools have greatly affected the improvement of Harijans. They have further alienated them from the rest of the society. Instead, other means may be employed to encourage more Harijans to send their children to the common schools.

All the above problems are of human and sociological in nature. Many a bottleneck may be quoted against the solutions given. But improvements in educational standards will be a reality only when the approach to solve the problem, is realistic.

The final result is chronic illeteracy, poverty of thought and ignorance of opportunities of life in which our children are growing into adults. While some of them are taking whatever that comes on their stride, others are not even aware of their role as citizens in future. Those who are deprived of facilities which they have a right to receive from the Institutional set up, are resigned to their lot. Todays' child in any village knows only to while away time in school or on petty jobs that fetch them a few paise. The most precious formative years of children are wasted because of the non-responsible familiar, educational and social surroundings. The children are growing in quantity but not on sound psychological base that mould them into responsible citizens.

If this basic problem goes into the cognition of planners and administrators, other problems will take care of themselves. Otherwise our children will become citizens without tommorrow.

poor performance criteria, poor reseach design or inadequate training methods" (p. 137). R.N. Haldipur has laid stress on the fact that "if training in the functional and sectoral areas of development administration, viz. project planning, agricultural administration, information systems, etc is to be effective, then there is need for vigorous analysis and determination of the training needs of civil servants chosen for training in development administration". (p. 155).

K. Diesh, in his article on "Action Research-Model For Changing Work System" has concretised some ot the basic characteristics of the participatory process. Based on his diagnostic experiments at Kalkaji Post Office and the Delhi municipal printing press, he has stated that "the change brought about through participative redesigning of the work system is capable of generating a sense of meaning and purpose to the employees and provides for their growth'. (p. 199) He has rightly emphasized that the underlying purpose of new forms of work organisation is "to develop work systems which provide intrinsic satisfaction to humanbeings who are called upon to operate them". (p. 191) Such a changing work system could eliminate "marked employee dissatisfaction on account of the working condition, organisation of work system, method of work disposal, group process, flow of communication, decision making and skill utilisation" (p. 192), which are presently rampant in almost all the work systems. Evidently, therefore, the findings of Shri Diesh's action research need much wider dissemination and greater appreciation so that a better awareness of the quality of life could be inculcated.

The compliation contains in its management techniques section, many valuable articles on systems analysis, performance appraisal, performance budgeting, discounted cash flow technique, project formulation and development planning and on managerial evaluatiou of development programmes. Indeed the scope of the publication has been very wide, nonetheless the problems are so wide and varied that it cannot be expected to cover all the areas in which many lay readers would be interested. For example, in a publication of this kind one would have liked to know the views of eminent scholars and administrators on problems like the deterioratiing law and order situation in the country, the increasing poverty of the teeming millions in spite of extensive developmental efforts, unabating nepotism, favouritism and corruption at all levels of the country, and vanishing dignity and confidence among the contemporary administrators of the country. But, probably, these are the problems on which it is not desirable on prudential considerations to talk loudly. In case they are not to be swept under the carpet, one would have expected the academicians to bring out certain diagnostic case studies in their regard.

The Publications Division deserves special commendation for expertly producing the book with an excellent index and brief bibliography on every topic discussed so that the interested readers may pursue the subject further.

Bepin Behari

Tribal Children

Our Tribal Children by S. S. Shashi, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi-110001, 1978, Pages 52, Rs. 17.00.

THE book is an interesting contribution to the literature of tribal children represeting various regions of the country. This includes the tribal children discussed in the book in a dialogue form between a father and a son and is very attractive and can be read at one stretch. Indirectly, it gives the cultural background of some of the important tribes of our country, such as Gaddis, the Gonds, the Santhals, the Murias, the Nagas, the Baigas, the Bhils, the Todas, the Bhutias, the Khasas and the children of the Islands.

Illustrations mainly through the photographs and the author's style of presentation is easily digestible and interesting.

The book has been written in historical perspective, which highlights the role of tribals in cultural revolution and making. As for example, how the Bhils helped Rana Pratap and Lord Rama accepted the hospitality of Shabri, indicating thereby their friendly attitude, bravery and sincerity have been well presented Thus, the tastes, habits, skill, behaviour, etc, as also the localities where the different tribals are living have been very well discussed.

B.N.S.

Destitute Children

Residential Programme for Destitute Children Guide Book I, by V. M. Kulkarni, National Institute of Public Cooperation and Child Development, New Delhi, 1979, Pages 44

THE BOOKLET, meant as a Guide-book, primarily confines itself to the organisational and administrative aspects of the problems of destitute children. It has been divided into five chapters with a foreword by M. M. Rajendran and the Preface by B. B. Chatterjee.

The role of voluntary organisations engaged in the task of welfare of the destitute children has been highlighted Undoubtedly, voluntary organisations render valuable service, but this cannot be generalised since it requires a more rigorous analysis of the inter organisational structure and function, which this booklet, naturally being so small, has not taken into consideration. The efficiency of a voluntary agency depends largely on its band of dedicated workers committed to the cause of social welfare. However, this booklet provides certain concrete suggestion for organising a scheme for the welfare of destitute children which would go a long way in tackling the problem arising out of rapid urbanisation and industrialisation. The details regarding the services and facilities like diet, availability of medical facilities, clothing, educational and vocational training, personal hygeine, recreational activities, participation of children in the work of the institutions have been dealt with ably.

Written in a lucid way, the booklet is timely in view of the International Year of the Child and would prove useful in the hands of those who are interested in the organisation and administration of child welfare programme.

—B. N. Sahay

May Their Tribe Multiply

Shameem Ahamed
FPO, Bellary

THE INDIAN YOUTH, if properly guided, can do yeoman service to the society. This has been demonstrated many a time. Here is yet another instance. The Youth Club of Kadlebal village in Hagaribommanahalli taluk of Bellary district has set a rare example of service to the community. Ever since its establishment in 1975, the Youth Club members took upon themselves the task of changing the economic and social scene of their village.

In last summer, the members sprayed insecticides to groundnut crop in a vast area of 240 ha with the assistance of the Department of Agriculture. As a result the department could get the work done at a minimum cost of Rs 1800 only

Realising the value of education the members of the club—seven of them graduates, raised a sum of Rs. 3,000 by staging a drama and selling lottery tickets of the Karnataka Government and constructed a class-room for running the fifth standard in the village They volunteered to teach English to the fifth standard students for full four years from 1975 till a regular teacher was posted. They provided electricity to the school by spending a sum of Rs 300 They have also provided benches and wooden planks for seating the students In the evening, free coaching classes are arranged by the club for the students appearing for public examinations, like the seventh, the tenth standard and Pre-University Course. A student of their village secured fourth rank in the district level Seventh Standard Examinations held recently.

A couple of years ago, the Youth Club conducted an Adult Education Class for 40 illiterates of their village. Recognising the enthusiasm evinced by them and the adult-students the Government has come forward to appoint a regular teacher.

The Members have arranged to get sanction for 30 old-age pensions for the people of their village. They are helping the authorities of the Farmers' Co-operative Society and the Syndicate Bank (the Bank has adopted village Kadlebal) in identifying needy persons for extending financial assistance and also in recovering dues from persons who have already received the loans and have become defaulters.

One Veerathaiah, aged 40, is deeply indebted to the Youth Club. When he lost his eye sight, the Club members arranged for the eye operation at their expense. Veerathaiah got back his eye sight and is leading a normal life.

Thus, the youth of Kadlebal village have set an ideal example to their counterparts in other villages. □

LETTERS

A Fine Collection

Sir,

I find 'Yojana' very educative, up-to-date and knowledge-oriented. I am a regular reader of your journal A lot of fine collection about 'Educational Technology' in the 1 September 1979 issue was really a hidden treasure to me. It's beyond description, to what extent, the articles published in Yojana have been helpful from the examination point of view

Thanks to you and your colleagues for publishing such a journal.

Vijoy Kumar
Jamashedpur

Save the Children

Sir,

YOUR editorial published in the "Yojana" dated 16 September, 1979 impressed me very much. I appreciate your proclivity in bringing the requisite facts to the notice of public particularly to the Trade Unions and the Government at the appropriate time. During this International Year of the Child no one appears to understand the perplexity of our children During 32 years of Independence our children hardly have any protection. Who is responsible for this state of affairs ? The reasons are manifold. It is a good time for people to wake up and do justice to the Children Mr. David L Guyer, President of the "Save the Children " is struggling for the sake of children by advertising through "TIMES" Why not we, particularly from Trade Unions/Government come forward for the betterment of our children like Mr. David ? Additionally the following should also be streamlined further and implemented—

(a) Efforts towards family planning ;
(b) Free and compulsory education to all children irrespective of the level of society from which they come upto matriculation standard so as to enable them to choose their place of work or the terms ;
(c) Free hostel and library facilities to the children who cannot afford this ;
(d) Discouraging children below a certain age to work at any place and protection from illegal exploitation ; and
(e) Creation of interest among the public so as to realise the difficulties of children.

In implementing these Government will have to incur heavy expenditure. The public be burdened for the welfare of the children as a whole.

J. Viswanadham
Ranchi

Regd. No. D(D)-
Licensed U(D)-52 to post without pre-payment at Civil Lines Post Office, Del

DURING INTERNATIONAL YEAR OF THE CHILD

IDEAL GIFT FOR THE CHILDREN

OFFER THEM A SET OF BEAUTIFUL BOOKS

Books Produced During International Year of the Child

ENGLISH

—Children's Mahabharata Rs 6 50
by Mathuram Bhoothalingam
(The great epic Mahabharata retold for children)

—Adventure of a Spacecraft Rs 10 00
by Mohan Sundara Rajan
(A science fiction for children)

—Things of Beauty– A Look at Our Heritage Rs 12 50
by Vidya Dehejia
(A look at India's heritage of handicrafts and ancient works of art)

– To Far-Off Lands Long Ago Rs 8 00
by Krishna Chaitanya
(Two stories based on Buddhist Jataka tales)

HINDI

--Tendua Aur Cheeta Rs. 8 00
by Ramesh Bedi
(Life and habits of the leopard and the hunting leopard)

Parvat Devta Rs 5 00
by Radhey Shyam Sharma
(A collection of eleven short stories of ancient times)

—Shri Krishna Katha Rs 8 00
by Sita Ram Chaturvedi
(The story of Lord Krishna)

– Asli Jeemakare--Rajasthan Ki Lok Kathaen Rs 7 50
by Bimla Mehta
(Fourteen folk-tales from Rajasthan)

—Pahelian Rs 7 50
by Surya Narain Saxena
(A collection of riddles in Hindi)

– Kaun Jeeta Kaun Hara Rs 6 00
by Krishna Chaitanya
(Two stories based on Buddhist Jataka tales)

—Bal Mahabharata Rs 7 50
by Mathuram Bhoothalingam
(The great epic Mahabharata retold for children)

--Vishva Ki Shreshth Lok Kathaen Rs 7 50
by Himanshu Joshi
(Contains interesting stories of different countries of the world including India)

BENGALI

—Chha Jane Mile Rs 9 00
by Ashapurna Devi
(A collection of stories)

URDU

—Pahelian Rs. 8.00
by S. Hussain and N.K Vikram
(A collection of riddles in Urdu)

OTHER CHILDREN BOOKS IN ENGLISH

—Children's Ramayana (Revised) Rs 7 50
by Mathuram Bhoothalingam

– Peacock– Our National Bird Rs 6 00
by Ajit Mukherjee

– The Story of Jawaharlal Nehru Rs 3 50
by S.D. Sawant and S D. Badalkar

--Children's History of India (Reprint) Rs 10 00
by Sheila Dhar

--This India Rs 10 00
by Sheila Dhar

India Yours & Mine Rs 6 00
by Kamala S Dongerkerry

– Our Tribal Children Paperback Rs 17 00; Library edition Rs. 20.00
by Dr. S S Shashi

Our Freedom Movement Rs 3 50
by S.D. Sawant

Tiger Rs 5 00
by Zafar Futehally

Indian Elephant Rs 5 00
by M Krishnan

– Our Birds (Reprint) Rs 6 00
by R P N Sinha

--Our Trees (Reprint) Rs 8 00
by R P N. Sinha

POST FREE SUPPLY

Books worth Rs 10 00 or more will be sent by Registered Post/V P P

RUSH YOUR ORDERS TO :

Business Manager
Sales Emporium
PUBLICATIONS DIVISION

NEW DELHI 110 001 : (i) Patiala House
(ii) Super Bazar (2nd Floor) Connaught Circus

BOMBAY-400 038 : Commerce House (2nd Floor) Currimbhoy Road, Ballard Pier

CALCUTTA-700 069 : 8 Esplanade East

MADRAS-600 006 Shastri Bhavan, 35 Haddows Road

PATNA-800 004 . Bihar State Co-operative Bank Building, Ashoka Rajpath

TRIVANDRUM-695 001 Near Govt Press, Press Road

Printed by the Manager, Govt. of India Press. Ring Road. New Delhi-110064 and Published by the Director Publications Division. Patiala House. New Delhi-110001

yojana

NEW
DEVELOPMENT STRATEGY
FOR THE EIGHTIES

TECHNOLOGY FOR
TODAY'S INDIA

INTEGRATED
RURAL DEVELOPMENT

HOUSING THE POOR

OUR ACHIEVEMENTS

Filament Winding for Fibreglass

THE National Aeronautical Laboratory (NAL) has developed technology for the manufacture of filament winding machine. Filament winding is done in making fibreglass reinforced plastics and involves combining glass or metal in continuous torm with an appropriate polymer. Fibreglass reinforced plastics are extremely valuable materials employed in industries of strategic significance such as aeronautics and space besides electrical, chemical and allied industries. Fibreglass reinforced plastics are considered light weight and are excellent electrical, mechanical and chemicals having corrosion resistance properties.

Fertilizer Production up

TOTAL fertilizer production in Fertilizers and Chemicals Travancore (FACT) during 1978-79 reached a record level. In terms of Nutrient Nitrogen, production showed an increase of over 12 per cent from 1,33,655 tonnes during 1977-78 to 1,49,978 tonnes during 1978-79. The production increase is 19 per cent in terms of nutrient phosphorous pentoxide, from 55,934 tonnes during 1978-79. This increase in fertilizer production would have contributed to an additional food production of over 3,00,000 tonnes of foodgrains in India. The value of production would be around Rs. 30 crore

A peak level total sales of Rs. 8,735 lakh was achieved during 1978-79 surpassing the earlier record of Rs 8,333 lakh

Digital Grain Moisture Meter

THE presence of moisture in grains poses a few problems for agriculturists and grain-dealers. storage loss is high and storage life is low if the moisture content of the grain is high Also the milling operation tends to be difficult and unsatisfactory if the moisture content is high. Hence the determination of moisture content is important to those engaged in production and distribution of grains.

To make moisture measurements possible, CSIO, Chandigarh has designed and developed a special electronic device.

The principle behind the design is that the grains have a dielectric constant which is varying with the moisture content of the grains. The varation in the dielectric constant is used to vary the effective capacitance of a suitable capacitor assembly. By measuring this capacitance it is possible to indicate the moisture content of the grains.

The device is based on integrated circuits and the final readings of moisture are given on three digit LED display in terms of percentage. The device can measure over a range of 5 per cent to 30 per cent. An automatic temperature compensating arrangement has also been included to make the measurements independent of variations in ambient temperature.

Palatable Isapgol Granules

CDRI, Lucknow has developed sweet pala Isapgol granules which can be used as a lax and a demand of about 1,000 tonnes has estimated. Presently the raw husk is used in Indi a bulk laxative.

The finished products have great export pote particularly to America, Europe and Middle countries. The export of raw Isapgol seed husk 1977-78 was about Rs. 20 crore.

Isapgol seed husk freed from any foreign impu is granulated through mixing with alcohol and g acacia solution followed by drying. The granula mass is finely powdered to 40-60 mesh size.

The sieved material is mixed with appropri sweetening, flavouring agents and the product may may not be mixed with other Laxative agents and effervescent powder

The Laboratory has produced the material in c kg. batches of various flavours and different forn The products have good consumer acceptability.

Protection of Ships

NAVAL Chemical and Metallurgical Laborato Bombay has developed a process for the prot tion of ships and steel structures by sacrific aluminium alloy anodes. The products are used protection of steel structures submerged in seawa against corrosion. The products include st tionary and floating structures such as ships, oil di ling rigs, offshore platforms, wharf walls, caissoo dockgates, and other floating structures.

Present annual consumption of aluminium anodes the Indian Navy is about 10 tonnes. In addition this, Shipping Corporation of India, ONGC and otl shipping companies also need aluminium anod It is estimated that about 100 tonnes of aluminiu anodes per annum may be needed in the country

Telephone Conference Facility

CENTRAL Electronics Engineering Resear Institute, Pilani, Council of Scientific & Indu trial Research has developed an electronic devi meant to provide the facility of a telephone conferen within an organisation, making it easy for the ex cutives and managers to take quick decisions witho interrupting their work. It is highly useful to indu tries, business houses etc. where they have intern exchanges. This device is simple to operate, light weight, small in size, easy to mount on the intern telephone exchanges and does not require any pow supply. It provides telephone conference between maximum of 5 phones connected to the internal e change. Provision is made either to drop out participant or bring in another participant during tl course of a conference without any interruption. □

YOJANA

Volume XXIII Number 24
1 January 1980
11 Pausha 1901

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Y o j a n a seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

IN THIS ISSUE

Chief Editor : P. C. Roy
Editor : Sethu Rao. S
Assistant Editors: P. Perumal
R. R. Rao
Sub-Editor : Vijay Verma

Senior Correspondents :
AHMEDABAD : Raman Patel
BOMBAY : Avinash Godbole
CALCUTTA : S. K. Ray
HYDERABAD : B. N. Murthy
MADRAS : T. R. Panchapagesan
TRIVANDRUM Rosscote Krishna Pillai
GAUHATI : R. N Bez Baruah
Photographic Officer : K. S. Nagaraj
Artist : P.K. Sen Gupta
Advt. Manager. T. R Maheswari

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address : Yojana**, New Delhi. **Telephones :** 383655, 387910 385481 (extensions 402 and 373) **Circulation :** Business Manager, Publications Division, Patiala House, New Delhi-110001

Subscription: Annual —Rs. 18; Two Years—Rs. 30; Three Years—Rs 42; Foreign Subscription : One Year —£ 2.70 or $5.50; Two Years—£ 4.50 or $9.00; Three Years—£6.30 or $ 12.50; Single Copy—£0.12 or $ 0.25

YOJANA

Wishes its readers a Happy and Prosperous New Year

Editorial

New Year, New Decade of Hope

As we step into the eighties, we hopefully look forward to a decade of prosperity, the national list of worries at the moment notwithstanding. Through diversification and expansion of industrial capacity, the country has come to posses sufficient consumer goods and manufacturing products. A sizeable export surplus in engineering goods industries has already developed. A petrochemical age backed by an efficient system of refineries, pipelines, storage and distribution is on the way. The commodity component of exports has changed a good deal, the emphasis being on manufactures and mineral ores. The flow of remittances from repatriates and nationals abroad have put the country in a happy foreign exchange position despite the mounting bill for import of crude oil. The growing awareness of the energy crisis has already impelled both the planners and users to give first priority to conservation of energy in industry. Considerable thought is also being given to effect a change in the growth pattern of our energy needs as also to exploit the renewable sources of energy.

Even the current drought, considered by a few as one of the worst after the attainment of independence, is not going to put a brake to the wheel of progress. On a most pessimistic basis of computation, the loss of foodgrain, both Kharif and Rabi, is estimated to be about 10 to 12 million tonnes. Still there would be enough stock in hand to keep the food for work scheme going in a smooth manner to remove the hardship of the people in distress. Steps are being taken to augment the availability of foodgrains in FCI godowns for supply to the remote tribal areas. According to a recent estimate, per capita availability of foodgrain have increased to 480-590 grams from almost 473 grams in 1970.

These hopeful ingredients in the present situation does not, however, offer any room for complacency. Both public and private sectors must follow strictly the norm of Plan discipline and resist the temptation to fritter away the resources for development by divesting the funds to new and avoidable expenditure. It is strange but true that about Rs. 1900 crores of additional expenditure, most of it non-Plan, has been approved, despite specific suggestion in the draft sixth 5-year Plan not to include such items. Wage rates must not rise unless it is linked with productivity except in rural areas where the rates are pitiably low.

The international scene also holds a new promise for prosperity. There is an increasing realisation in the comity of nations that the old should yield to a New International Economic Order (NIEO) where mutuality of interest between the developing and developed countries will alter economic relationship in a dynamic way. Only on the basis of rapid industrialisation of the South, the countries of the North would have increasingly visible trading partners. The Second General Conference of the United Nations Industrial Development Organisation (UNIDO) in Lima five years ago agreed on a measure to help the developing countries increase their share in the World industrial output from seven to 25 per cent by 2000 AD. The share of these countries today has hardly reached nine per cent. The third general conference of UNIDO, which is opening in New Delhi this month, will provide a new opportunity for global cooperation to reduce sharp differences between the rich and poor countries. □

Highlights Of The Revised Draft Sixth Plan

* The outlay for public sector in the revised document is Rs.71,000 crore as compare to Rs.69,380 crore in the earlier Draft Plan. Agriculture and Allied Sectors wil account for Rs.10,540 crore, Irrigation and Flood Control--Rs.7,604 crore, Power-Rs 15,112 crore, Village and Small Industry--Rs.1,410 crore, Industry and Minerals Rs.13,992 crore, and Transport and Communications--Rs.11,178 crore, Housing an Urban Development--Rs.2,133 crore, Education--Rs.1,986 crore, Health--Rs.1,263 crore. Science and Technology - Rs.655 crore, Welfare of Backward Classes--Rs.627 crore, and Social Welfare and Nutrition--Rs.377 crore.

* The revised document gives a place of primacy to the problems of removal of unemployment and a significant reduction in under-employment. Generation of additional employment is estimated at 46.6 million standard person years as against 49.3 million standard person years indicated in the Draft Plan. This difference is accounted for by methodological changes including revised labour co-efficients in sectors such as Agriculture and revision in the value of output in the base year and targets in the terminal year.

* The gross domestic savings estimated in the revised Draft Plan are higher by about Rs. 25,000 crore than indicated in the earlier Draft. This increase is on account of inclusion of "own account labour inputs" and upward revision of estimates in the household savings in the form of physical assets like irrigation structures, farm and fishery equipment, village industries equipment and transport equipment.

* The aggregate resources for the Plan being Rs. 1,41,377 crore and the public sector outlay Rs. 71,000 crore, Rs. 70,377 crore would be available for fixed investments in the private sector and for additions to inventories of both public and private enterprises.

* An annual growth rate of 7 per cent of real exports has been targeted for the Plan period. Exports are estimated to rise from Rs. 5,160 crore in 1977-78 to Rs. 7,235 crore (at 1978-79 prices) by 1982-83. Imports have been planned to increase from just over Rs. 7,000 crore in 1977-78 to Rs. 10,720 crore in 1982-83 (at 1978-79 prices).

* The physical targets in the revised Draft Plan have been modified in a few sectors in the light of the performance of the first year of the Plan and a reappraisal of the progress that is likely to be achieved during the remaining four years. On this basis, the major sectors in which significant downward revisions have become necessary are Irrigation and Coal. The target of the irrigation potential to be created has been changed from 15 million to 13.8 million hectares and of coal production from 149 to 143 million tonnes.

* In a Preface to the Revised Draft Plan Document, Dr. D.T. Lakdawala, Deputy Chairman, Planning Commission, has pointed out that "ordinarily, before publication, this revised Draft Plan would have been presented to the Government of India and thereafter submitted to the National Development Council for consideration and approval. It has been decided that in view of the prevalent circumstances, the Revised Draft Plan Document may be released for general information and discussion and for facilitating the formulation of the Annual Plan 1980-81."

New Development Strategy for the 1980s

D. T. Lakdawala

WHAT does the decade of the 1980s hold for us ? Shall we be able to achieve our targeted rate of growth ? Can the pattern of development continue as hitherto or is there a need for course correction ? What are the obstacles that are likely to emerge and how do we overcome them ? Does the future hold out any grave threats or enticing possiblities and how can we meet them or make most of them ? It is only prudent that we take stock of the situation and evolve appropriate strategies so that we enter the new decade well-equipped.

To begin with, it is necessary to recognise the uncertainties inherent in the current international economic scene. The international economic organisations and experts agree that for many reasons the world of the eighties is likely to be a disturbed and rather unstable one. In the small world in which we live today, no country, however large and self-reliant, can insulate itself from the prevailing international situation. The shifts and pulls in the international economy will inevitably have their repercussions on the national scene. The continuing oil crisis and the attendant progressive increases in energy costs, the disturbance in the world monetary system, the cost-push inflation and imbalances in trade and variety of attendant economic problems have affected almost all countries. This disturbed equilibrium had however, an unequal impact on the fortunes of various countries. The less developed countries have been generally the most adversely affected. It is as yet difficult to predict the trend in petroleum prices, the adjustment policies likely to be adopted by the developed countries to deal with the situation and the precise outlook in regard to trade, tariff and transfer of resources policies towards the developing countries. As all of these will have a significant bearing on the pace and pattern of industrial growth in the developing countries including India, a great degree of uncertainty is inherent in the situation.

> *WHAT does the decade of the 1980s hold for us ? Shall we be able to achieve our targeted rate of growth ? Can the pattern of development continue as hitherto or is there a need for course correction ? What are the obstacles that are likely to emerge and how do we overcome them ? Does the future hold out any grave threats or enticing possibilities and how can we meet them or make most of them ? It is only prudent that we take stock of the situation and evoke appropriate strategies so that we enter the new decade well-equipped.*

Strategy for the 1980s

Given this predicament and our limited capacity to change the course of international events, it becomes a matter of importance for us to identify and deal with those critical elements which would help to reduce the vulnerability of the Indian economy to the changing international situation. The strategy for the 1980s should exploit the new increased opportunities of trading with the oil exporting countries and, if necessary, attracting capital-flows from them. It should also avail itself of the export possibilities to the developed world. Before I proceed to deal with this aspect of the problem, it may be useful to briefly review the progress of industrial growth over the era of planning and to identify the strong and weak points of the industrial economy so that the future path can be charted out on a clear understanding of the current situation.

The achievements in the industrial field in the planning period have been significant in many respects. As far as the rate of growth is concerned, the period can be conveniently divided into two parts. There was a rapid and almost continuous growth in the industrial sector during the first 14 years of the plan period i.e. from 1950-51 to 1964-65. Industrial production which increased at an average rate of seven percent in the first decade (1950-51 to 1960-61), recorded an increase of 9 per cent per annum during the next four years i.e. 1961-62 to 1964-65. The year 1965-66, the last year of the Third Plan, marked a water-shed in the performance of industrial sector. The growth thereafter has been uneven and relatively sluggish. During the Fourth Plan period, industrial production grew at an average rate of about 4 percent annum and during the Fifth Plan period (1974-78) around five percent per annum. Gains in other vital respects have been sufficiently impressive. The industrial base has been substantially strengthened and rapid advances made in developing scientific and technological capabilities. In most of the industrial products covering capital goods, basic goods and intermediates, the country is largely self-sufficient. Modern industries like electronics, petrochemicals and electrical equipment have made significant strides. Our imports are limited to fuel and industrial raw materials such as petroleum, sulphur, rock phosphate and certain non-ferrous metals, where our natural endowment is limited to certain sophisticated types of machinery. While this limitation was originally due to our import substitution policy, it is a measure of our progress that it can today be largely defended even on ground of comparative advantage. When we import more coal, cement and other essential commodities because of domestic scarcities, our great anxiety is to insulate the domestic market from the higher prices of imported portions. Manufactured products hardly subsidized now constitute a significant proportion of our exports. We are in a position to export turnkey projects and Indian consultancy services are in demand abroad. Indian capital has established foreign enterprises not only in traditional consumption

D.T. Lakdawala is Deputy Chairman, Planning Commission

goods industries like textiles and sugar, but also in engineering and pharmaceuticals.

Deficiencies and Corrective Measures

The pattern and process of industrial growth followed hitherto, though commendable in many respects, have also revealed important imperfections and defects. Industrial growth has not been able to make any dent on the employment problem. The growth of employment in industry has not kept pace with the growth in the working force which has, therefore, sought unproductive absorption in agriculture, rural industries and unorganised industry. Linkages between organised industry and the rest of the economy have been weak. The two sectors have faced different environment, different factor prices and markets, so that the gap between the two has widened and the dualism accentuated and sharpened. While import substitution acted as a spur to industrial growth, the protective environment in which such growth took place led to a certain deadening of susceptibilities to international challenges and opportunities. Even within the limits of the domestic market, industrial policy did not pay proper attention to cost effectiveness and economies of scale. The general levels of efficiency in the industrial sector, therefore, left much to be desired. Capacity utilisation in many industries was less than optimal and returns expected on investments did not fructify.

The draft Sixth Plan attempted to correct these deficiencies. It suggested several measures to ensure a stable growth rate of seven per cent in industrial production during 1978-83. Increase in public sector investment, higher rate of agricultural growth and efforts to increase mass purchasing power were fundamentally in this direction. The role envisaged for investment in the industrial sector, including the organised and the corporate sectors is considerable. At the same time the pattern of industrial development was so modified as to subserve the major aims of elimination of unemployment and of making a sizeable impact on the conditions of persons below the poverty line. Greater emphasis was placed on the small scale, village and cottage industries; ancillary industries were to be greatly promoted. Organised industry was to be encouraged mainly in so far as it provided inputs to agriculture and rural and cottage industries or supplied mass consumption goods very economically. In view of the more comfortable foreign exchange position and to correct uneconomic import substitution policies, an import liberalisation policy was envisaged and has been now put into effect. The industrial licensing policy was considerably liberalised. Streamlining of implementation of procedures of declared policies of Government relating to liberalisation measures already announced is a continuous exercise, but fears of excessive "centralised" planning being expressed as a constraint on industrial development are exaggerated. The problem seems to be in a different direction, namely that the level of investment and mobilisation of resources, expected from the corporate sector, is much higher than the existing rates and perhaps even the "future" intentions being expressed. In the case of controlled industries, the need for allowing adequate post-tax rate of return was recognised. Prices were revised accordingly for some industries like cement, steel and fertilizers.

Shortfall in Industrial Growth

These factors were expected to contribute greatly to speed up industrial growth rate and in fact they c so in 1978-79. However, the the year 1979-80 h seen a setback to industrial growth rate. This can o be marginally explained in terms of the effects of a b agricultural season. Part of this setback could seen in the structure of production in the last ye during which the growth in basic industries like co cement and steel was much less than targeted. Tl shortfall in domestic production of these commoditi was partially corrected through more liberal impor thus preventing the adverse effects on user industrie Increases in production of items like sugar, textile trucks, etc., helped by constant monitoring made a hig growth rate possible. But there are certain non-tra ables like power and transport in regard to which the is no easy way to meet the deficits; and with their sho falls in 1979 the industrial growth came to a grindi halt. The present malaise in the industrial econon cannot be attributed to lack of capacity or adequa level of demand. It is becoming increasingly cle that the major reasons for a large part of the shortf in anticipated production in the current year lie the sphere of poor management and unhealthy indu rial relations. It is regrettable that these featur should have become prominent in the public sector which the nation had placed major hopes for restru turing the economy. If a better steady growth ra has to be ensured, these defects have to be remedi Industry and Government seem by themselves to powerless to do so. A general realisation has dawn that while increased production may not be t panacea for economic welfare, without it no wor while increase either in the welfare of persons direc participating in the industry or the masses as a wh is possible. A consensus on the norms according which the fruits of increases in production and pro should be shared among the various sectors and for t resolution of any differences that may arise is urgen needed. The evolution of such an agreement can greatly helped if the present practice of regardi changes in real wages as an unmixed blessing or bur without simultaneously paying attention to chan in productivity, prices and restrictive practices is gi up.

Assessing the Resources

Looking to the 1980s, we have to clearly ass the resources of this country and shape the pattern our industrial growth in tune with them. The size our counry has unfortunately given rise to some rat exaggerated notions of the extent of natural resour and the type of industrialisation and life style that can afford to aim at. These misconceptions n to be corrected. Viewed in terms of our large po lation ,the available known natural resources in te of land, water and minerals are limited. We h pretty well exhausted our arable land. Increased a cultural production, has therefore, to depend prima on intensive cultivation, which will call for mas inputs by way of fertilisers, water and energy. W our reserves of iron ore, limestone and coal are c paratively plentiful, many other basic raw mater required for industrial production like non-fer metals, fertilisers and petro-chemicals are sever limited. Above all, energy will be a major constra In spite of the recent discoveries of off-shore oil natural gas, we are greatly dependent on import petroleum and petroleum products. In regard to c the position is somewhat better but even here resources are relatively small as compared to o

countries of comparable size like USA, USSR and China. Unless we can adopt measures which would substantially change the growth pattern of our energy needs or learn to commercially exploit renewable sources of energy, our ability to maintain a reasonable rate of growth of the economy in general and of industrial development in particular seems problematic.

Use of Scarce Resources

Unfortunately, this seems to be an aspect to which little attention has so far been given in this country. We are profligate in the use of our scarce resources. Preliminary data indicate that in terms of value added, the energy consumption in several of our industries is unduly high. There is considerable room for improving the efficiency norms thus reducing the demand for scarce resources. The tremendous waste in the exploitation of our mineral resources, and the lack of concern for beneficiating and utilising the inferior grades of materials which are allowed to go waste, must be immediately ended. The lack of concern for the more efficient use of scarce resources arises in part from our pricing policy which makes available these scarce resources relatively cheap. It may be necessary to price these products more appropriately in terms of their real value to the economy. One need not worry that this price increase will unduly benefit the resource owners, as some of these lie in the public sector and in other cases, we can take steps to ensure that the advantage of excessive profits does not accrue to private parties. It may not be too much to hope that even without the urge of price increases, organised industry at least will see the writing on the wall, act in advance, and step up research in these directions.

While our natural resources are limited, our human resources and training facilities are relatively large. Our competitive advantage in the comity of nations lies primarily in our trained labour and its productivity in relation to wages. A major emphasis would, therefore, have to be on harnessing this large potential of human resources. A large number of our highly skilled personnel have sought careers abroad and remarkably succeeded in the highly competitive conditions of the developed world. Some of them have sought without success to return home and shown a willingness to work at more modest remunerations. A few have gone back after heroic efforts at adjustment. In the next decade, industry and the community must make earnest efforts to see that it can make much better use of them.

Plan for Growth of Exports

Looking ahead, industry must plan for a sizeable growth of exports. Our past experience reveals that a flourishing export trade cannot be built upon the basis of treating export market claims as residuary claims to be looked after domestic demand claims are met. While building up of industrial capacity, we must consider the export possibilities and provide for them. For the variety of products that India manufactures and their costs, the small volume of our export can only be explained by our insensitivity and indifference to the needs of the outside world and our inability to adapt our products to its requirements and tastes. The increasingly protective barriers of the developed world no doubt present a powerful barrier, but in can be surmounted given flexibility and determination.

While we have succeeded in building up a high technological capability, we have hitherto largely taken the same course in this respect as industry abroad and have not shown much ingenuity in building up a technology of our own suited to our different factor supplies and to our own resource endowment. In other words, an appropriate technology is yet a dream for us. It is only in the building up of such a technology that our hope of poverty amelioration and elimination can find a sound foundation. The expenditure on research made by private industry in relation to the gross sales compares unfavourably with that in other developed countries in spite of several inducements. There are certain causes of price rise like the increase in investment cost which seem to be inescapable and yet price stability is of the utmost importance for India. It can only be through sustained product and process improvement through technology and research that rising costs can be successfully curbed. This is a point to which industry must pay increased attention.

Industry can only flourish if it is in a position to respond to the demands of those participating in it and of the general community. At present the terms between the two can at best be described as those of temporary truce. It may partly be that the expectations of the workers and the society are excessive but there are quite a few legitimate demands which must be met. Enlightened opinion all over the world believes that the higher posts in industry should go mainly according to merit and that heredity and family should play, if at all, a very minor role. As its corollary, must come various training facilities and the sincere effort of the elders in the industrial system to extend all possible opportunities for promotion to those who deserve it. Industry is far from fulfilling these conditions with the result that the society does not look upon persons occuping higher posts with a feeling of admiration and emulation. Industry must try its best to see that all who come in contact with it—consumers, ancillary industries, and the surrounding areas get a feeling that it is anxious to serve. □

A Record Ratoon Crop in Sugarcane Cultivation

Devangi Prafullachandra, a progressive agriculturist and innovative farmer in Shimoga District in Karnataka, has created a national record in agriculture by raising the eleventh ratoon crop in sugarcane. The 12th sugar cane crop, CO 419 and CO 740 variety, is ready for harvesting in the Malnad farmer's field on the bank of the river Tunga

When sugarcane is harvested a portion of stack is left underground to give raise to succeeding growth of cane, a ratoon crop. The ratooning is generally discontinued after three or four seasons as it is felt that the yield will be uneconomical.

After a careful experiment of cultivating a single original planting for eleven years Prafullachandra has proved that ratoon crop involves lower cost of cultivation, early maturity, richer quality and better yield Farmer can have more time to attend to other crops. One of the reasons for his success is that Prafulla leaves the thrash after harvest for conversion into organic manure against the usual practice of burning.

Prafulla has maintained a steady average yield of 40 tonnes per acre in his repeated ratoon He is saving an average of Rs 1,500 per acre on cultivation.

Experts from Agriculture University and the State Sugar Directorate have been studying the experiment.

Prafullachandra, who has many innovative ideas including improvised areca boiling and drying, has the unique distinction of achieving national records both in sugarcane and paddy cultivation Out of the three national records in sugarcane crop competition his average production of 447.13 tonnes of Eksali (1975) per hectare is still to be equalled.

S. K Seshachandrika, Field Publicity Officer, Shimoga.

20 DPD/79—2

Technology for Today's India

V. G. Rajadhyaksha

TECHNOLOGY for today is not only of crucial importance in shaping India of tomorrow but has recently become a subject of keen debate also amongst economists, industrialists and politicians. It is perhaps worthwhile looking back at the technological changes that have taken place in the last 32 years since Independence so that we can take stock of how far we have come and judge our successes and failures. Our technological progress by any standard has been impressive and there is today hardly any major sphere of economic activity where we have not achieved a substantial degree of self-reliance. It is interesting to note that the proportion of our total plan outlay financed from foreign aid (net) has come down from 17 per cent in the 2nd Plan to 3. 1 per cent in the Draft Sixth Plan. But what is even more striking is the change in the composition. Whereas in the First Plan imported machinery and capital goods accounted for 16 per cent of our total capital investment they amounted to 7 5 per cent in the Draft Sixth Plan. On the export front, the change has been no less remarkable—manufactured goods of which engineering goods are predominant, raising from 0 4 per cent to 15 per cent in 1978 representing the largest item of our export. There can be no doubt that in the use of modern technology, India today is in a class by itself among developing countries Does it follow therefore that we should continue on the same technological path as before? It is necessary to examine some of the other implications of our technological growth rather than just its effect on our balance of payments. Perhaps the most important of these is employment.

The organised manufacturing sector today employs about 2.6 per cent of the work force as compared to 2 per cent in 1951 despite the massive investments which have been made in it. On the other hand, the employment in the unorganised manufacturing sector has gone down from 7 per cent of the total work force in 1951 to about 6.7 per cent in 1973. This unorganised sector, much of it semi-urban or rural areas was mainly engaged in activities such as making textiles, leather products and pottery as also oil milling, food processing and a large variety of other handicrafts. In many of these there has been a technological shift towards mechanised capital intensive technologies. If, for 1977-78 we assume that the output of factory manufacture had been no higher than in 1960-61 and that the balance of output had come from the non-factory sector, the latter would have generated about 12 million additional jobs i.e about another 4 per cent of the total work force would have been absorbed by the manufacturing sector. Even assuming that there are industries like steel, coal, cement, power and fertilizers for which factories a[re] essential, these being highly capital extensive, it m[ay] have reduced this figure by one per cent or so at t[he] most. Unemployment computed in terms of pers[on] years is estimated today to be about 8 per cent. [It] is clear therefore that in overall terms technologi[cal] shifts over the last two decades have had a signific[ant] and adverse effect in employment.

V. G. Rajadhyaksha is Member, Planning Commission.

Capital Intensive Technologies

It is argued that in industries where a range [of] technological options with varying capital employm[ent] ratios are available, changes in the direction of capi[tal] intensive technologies are necessary firstly, to ke[ep]

For India of tomorrow, technology fo[r] today is of crucial importance. There ca[n] be no doubt that in the use of modern technology, India today is in a class by itse[lf] among developing countries.

down costs and secondly, to improve quality or o[f] better value for money. While there is some merit [in] these arguments, there are a lot of pitfalls in mak[ing] such comparisons. Take, for instance, costs. Most [of] our factories are situated in or around large towns [and] cities where they have access to many subsidised [in]puts such as transportation for workmen, housi[ng,] water supply, sanitation, schooling, medical facili[ties] which are denied to the rural or semi-urban populati[on.] Again most modern factories have to use power, [an]other heavily subsidised input. Centralised product[ion] requires national or regional distribution and this me[ans] long distance hauls, all of which are subsidised by [the] State. Diesel oil in India, for instance, is sold at [..] the international landed price. Lastly, capital itself [is] subsidised through accelerated depreciation, devel[op]ment rebates, excise duty and sales tax concessio[ns,] tax holidays and so on. In certain backward areas th[ere] are also capital subsidies and concessional rates [of] interest. Till the cost of output of large scale, cap[ital] intensive units is corrected for these subsidies, comp[ari]sons with costs of the products of disaggregated vil[lage] based industries become very difficult. One of [the] major obstacles to making sound decisions in t[hese] fields is the lack of data and intensive industry-[wise] studies are badly needed. Unfortunately, very few [of] our many economic experts whether in industry o[r] the academic world and none of our technological [in]stitutions pay any attention to such problems focus[sing] their attention on the same techno-economic is[sues] as the developed world.

Let us turn to quality. It is sometimes but not always true, that the products of large units are of a higher quality than that produced by the small and unorganised sector. Is this inevitable? There is good reason to believe that it may not be so. Has there been for instance, any real R&D done to see how the quality of products of the unorganised sector say cloth or leather goods or pottery can be improved? Very little when one compares it to the research input that has gone into the organised sector—very often through purchased technology. One of the major challenges facing our scientists and engineers today is thus the development and propogation of technologies which has low capital to employment and low capital to output co-efficients but which produce goods and services of mass consumption at low cost and acceptable quality.

Infrastructure Needed

Nothing that I have said is particularly original. Why, despite this felt need, nothing happens is also no secret? It is simply that the educational and social background of our scientists and engineers, the origin and curricula of our teaching institutions and the orientation of organisations like the National Research Development Corporation and our CSIR laboratories makes it difficult for them to accept the environment that real field work in these areas exposed them to? We must recognise that the value systems they have been brought up to accept, ignore or underrate—technological breakthroughs in the fields to which I have referred. I am afraid, we have, all too often, accepted the developed world's standards of what is good technology as being relevant in every sphere of economic activity when common sense tells us that it cannot be so. It might have been more manageable if this attitudinal change were to be required only of our technologists. The act is that it is required right across the whole spectrum of our society. It is easy enough, for instance, to reserve a large number of products for the small, cottage and village industries It is far more difficult to create the infrastructure which ensures that the physical, financial, technological, marketing and training inputs required by small entrepreneurs and artisans to develop successfully are provided in time, Unfortunately, the people who go to our DICs, rural banks, rural cooperatives, small industries institutes, KVIC field staff are not always the most talented and motivated people. More than anything else, the thrust of administrative reform must be to reverse the present pull of the large towns and cities on our best human material.

Energy Crisis

Besides employment, a new dimension has recently been added to technology policy and that is energy. Unlike employment where there are at least, theoretically, soft options there are no soft energy options; there are only formidable technological and other barriers which every passing day brings a little nearer than we had anticipated. The most immediate and frightening of these barriers is the petroleum crisis, the magnitude of which is still not generally realised. The current diesel and kerosene shortages we see around us do not arise out of any lack of foreign exchange but simply because neither crude oil nor petroleum products are physically available at anywhere near the official prices. The problem is going to get worse as times go on The chances of our discovering major oilfields on-shore or off-shore of a size which will insulate us from this threat are remote and we obviously cannot bank on it. If we are going to survive as a self-reliant and solvent nation then there is no escape from adopting a strategy which not only stops the growth of demand for petroleum products but begins to reduce consumption. This poses a major technological challenge to the country and illustrates admirably the contrast in the approach that India must adopt as opposed to the developed world. Replacement of fuel and furnace oil for industrial uses by coal or coal gas are well established technologies already highly developed in the West and we need not waste our time rediscovering them. Unlike the developed world we do not have a problem of petrol shortages and the development of more efficient petrol engines or use of alcohol to extend petrol supplies has a relatively low priority. Our priorities are quite different—how to reduce the consumption of kerosene and diesel which accounts for nearly half of our petroleum products. We must of course develop more efficient devices for conserving them and indeed kerosene stoves which are 60 per cent more efficient than the conventional ones have been developed but not produced or marketed on a scale which is relevant. Here, immediately is an opportunity for young technologist-cum-entrepreneurs.

One of the major challenges facing our scientists and engineers today is the development and propogation of technologies which have low capital to employment and low capital to output co-efficients but which produce goods and services of mass consumption at low cost and acceptable quality.

The diesel problem offers a much greater technological challenge Here again, I do not believe our scientists and technologists should spend their time on developing more efficient diesel engines for vehicles, pumps or generators as this is a field in which much R and D is being generated in the developed world and all we should do is to make sure we have access to it.

Substitute Fuels

But we cannot survive by merely becoming more efficient consumers of diesel. Nor given our needs can we sharply cut back the growth of engines which use it as a fuel. We have thus no option but to look at substitute fuels. In the short term the most likely option appears to be producer gas based on coal as was done during World War II. However, ever since this technology has stagnated and one of our major goals in the energy sector could be to develop a cheap, light and efficient mobile producer gas plant. In the longer term, if our agricultural productivity begins to reach international standards so that we can produce alcohol from carbohydrates in quantities surplus to its consumption as a raw material for chemicals its use as a partial substitute for diesel may also become worth developing.

This brings me to more complex but much more basic issues such as the technological choices which are made consciously or otherwise in determining the pattern of economic growth and their impact on the rate of growth of energy demands. Currently our rate of growth of commercial energy consumption is about

1.8 times the rate of growth of GDP whereas in most developed countries the ratio is less than one. On the other hand, their per capita consumption of energy is 30 to 50 times higher. We just do not have the fossil fuel resources, even coal to sustain anywhere near these levels of energy intensity and alternative sources like breeder nuclear power and fusion, although they must be vigorously developed, are some decades away and hedged with serious environmental doubts. Our medium term options are therefore largely dependent upon increasing the use of renewable energy resources—hydro-electric, biomass, solar absorption and photo voltaic systems and so on, supplemented where possible by wind and tidal power. This has very crucial technological implications in the sense that processes, where high quality energy, especially bulk power is essential, should, where possible and feasible, be discarded in favour of disaggregated low quality energy consuming systems. Food preserving such as deshelling, flour making and rice oil milling, weaving

No other country has the human and physical resources we have . . . What we need is the kind of inspirational leadership to kindle this enormous potential—leadership of that kind is sadly lacking today.

cloth and pumping water are some typical areas where this approach appears to be relevant. Fortunately, this takes us in the same direction as the employment imperatives of technological options and re-enforces them. However, the problems of implementation are the same namely—a strong urban bias amongst the people on whom we must rely to develop and implement this strategy.

Problem of Mass Communications

Nowhere is this problem of technology and its urban orientation been more manifest than in the field of mass communications especially radio and television. One of the major objectives of introducing radio and later television into India was to make them an effective instrument of education, development, information and national integration, with entertainment thrown in as a means of attracting and holding an audience. Unfortunately, what we see today, as has been clearly brought in the Verghese Report is that both the software and hardware of radio and TV are all highly urban oriented, heavily entertainment biased and their contribution to the development process extremely limited. The development of cheap mobile recording equipment, inexpensive transmitters and receivers should in this day of micro-miniaturisation prove to be technologically feasible. What we need is the motivation to develop such hardware and even more difficult, the appropriate software. Notwithstanding the satellite instruction television experiment (SITE) which has produced conflicting views on its efficiency as a medium of rural development, given our resource constraints and priorities, I am convinced that the mass communication medium we must concentrate on during the next twenty years is the radio.

Technology Absorption

The third and last aspect of technology policy is technology absorption and development. Unlike the two aspects of technology policy referred to earlier, namely, employment and energy where we are goi[ng] to be largely on our own there are many areas of soph[is]ticated technology (sophisticated from the develop[ed] world's stand point) where we have much on whi[ch] we can draw upon from elsewhere. Despite the increa[s]ing emphasis we shall have to give to decentralis[ed] employment intensive systems of production, there w[ill] be many products such as steel, aluminium, fertilise[r], cement, petrol-chemicals—where we must produce [on] an internationally viable scale and use the most a[d]vanced available technology if we are to avoid becom[]ing a high cost producer of these basic inputs into agri[]culture and industry. There are also strategic areas lik[e] nuclear energy and defence equipment where uptodat[e] know-how is difficult to buy. We have on the whol[e] succeeded reasonably well in buying technology an[d] operating it but we have bought and every few year[s] we have to go out to remain technologically uptodate.

Why should this be so when we are supposed t[o] have the third largest reservoir of scientists and engi[]neers in the world? Is it to do with the organisation o[f] S and T in the country, the way it is planned and co[]ordinated or is it weaknesses in the formulation of its objectives? Does the problem arise on account of the personnel policies followed in our S and T institutions to be clarified? Are the linkages with the users namely the industry defective? Is it a lack of funds or the absence of a selective approach so that the available funds get dispersed to sub-critical levels? Or is it simply that unlike China which, for various reasons, shut itself for three decades from the rest of the world and was forced to rely on itself to develop its technologies under the compulsion of survival, we with our open door policies, could always look to other countries for assistance. With their assistance came their technology, their culture and their orientation. These are some of the problems of technology policy making which are a cause of concern to the nation.

In many ways the challenge of technology in India today is unique. No other country has the human and physical resources we have, but equally no other country has the size and complexity of problems to tackle. What we need is the kind of inspirational leadership to kindle this enormous potential—leadership of a kind which, I must confess, is sadly lacking today. I can do no better than refer to a quotation :

"A leader of his people, unsupported by any outward authority, a politician whose success rests not on craft or mastery of technical devices but on the convincing power of his personality, a victorious fighter who has always scorned the use of force, a man of wisdom and humility armed with resolve and inflexible consistency who has devoted all his strength to the uplift of his people and the betterment of their lot. A man who faced the brutality of Europe with the dignity of the simple human being and thus at all times risen superior.

Generations to come, it may be, will scarce believe that such a one as this, ever in flesh and blood, walked on this earth".

This is the tribute that was paid to that giant amongst men, Mahatma Gandhi, by a giant amongst scientists, a man to whom modern technology will remain for ever indebted—Albert Einstein. I have no doubt, however, that such leadership will arise again when the nation feels almost as one man, that it is what we need most. ❑

New Deal for the Rural Poor

P. C. Roy

DESCRIBED by the planners as the culmination of a long process of evolution, the new programme of Integrated Rural Development (IRD) launched in 1978-79, has aroused considerable expectations in many quarters. If not the last hope for the poor majority who live in villages, it must not fall because it is based on "the experience gained by the planners in the formulation and implementation of various earlier programmes for the development of the rural areas and the uplift of the rural poor". A full review of the on-going programmes like Small Farmers Development Agency (SFDA), Drought Prone Areas Programme (DPAP) and Command Area Development (CAD) was made before it was decided to adopt the new strategy to bring about tangible improvement in the living condition of the poorer section of the rural population through increased investment and employment of manpower. IRD is based on decentralized micro-level planning at the block level with a view to utilizing fully all local resources through planning at the grass roots. It is designed to create additional employment and raise the income levels of the identified target groups, consisting of marginal and small farmers, agricultural labourers, small artisans and persons belonging to scheduled castes and tribes. It, however, does not supplant the on-going programmes but to start with it has taken up only those blocks for intensive development where necessary infrastructure has already been built up by any or mix of the on-going programmes. Out of 5,000 blocks in the country IRD is expected to cover 3,500 by the end of 1982-83.

Despite a number of developmental schemes being in operation in rural areas, the benefits of development are not reaching the poor. The Integrated Rural Development programme launched about two years ago was widely acclaimed as a better deal for the rural poor. Accompanied by Raman Patel, Senior Correspondent at Ahmedabad, P. C. Roy, our Chief Editor, paid a visit to Anand recently to have a look at the way IRD is progressing in the model block. Here he reports :

At Anand........

In Gujarat our visit was confined to Anand one of the three blocks in Kheda district which the State Government have taken up for intensive development under IRD programme. Widely known for its highly successful milk cooperatives, Anand has already carved out a niche for itself as a model block in official circles. Comprising an area of 675.59 sq. kms the block has a total population of 3,99,076, of whom 18,847 belong to scheduled castes and tribes. The number of land owning people is 37,478 but 70 per cent of the owners are small and marginal farmers. The occupation pattern of the people shows that 1,13,395 persons are employed, agricultural providing employment to 72,802 persons including 30,140 agricultural labourers. The block has the distinction of having all its 74 villages electrified, connected by link roads. The percentage of literacy is 50.2 much above the national average, and 59 per cent of the cultivable land is under irrigation. The farmers are progressive, receptive to new ideas and adopt modern agricultural practices once they are convinced. Bajra is the principal foodcrop as well as the staple food of the people. The next important crop is paddy, followed by wheat and pulses. Cash crops such as tobacco and cotton also grow side by side. The Kheda District Cooperation Milk Producers Union Ltd. at Anand, popularly known as Amul Diary provides a ready and assured market for milk to the milk producers. It also provides them with technical guidance and services for scientific management of livestock enterprise. An intensive cattle development programme has been in operation in the area since 1965-66 and includes a special package of activities such as artificial insemination, supply of bulls for service, sexual health control, fodder development and high milk-yielding animals. Three hundred and ninety-nine cooperative societies falling under different categories like credit, milk, lift irrigation, housing, industries and others are also in operation. Surely the block had the requisite infrastructural facilities when IRD was launched in 1978-79.

IRD in Practice

Although it was claimed that 1158 persons in agriculture, minor irrigation, animal husbandry, fisheries and marketing were benefited under the scheme at a cost of four lakhs of rupees, it appeared, however, that the guidlines for IRD could not be suitably followed in the initial stages, particularly in identifying the individual beneficiaries. This year 1852 beneficiaries eligible under IRD programme were identified in 65 villages after quick survey of eight groups of villages, not benefited by SFAL or any other programme in the past. Adopting a compact area approach the IRD programme is attempting to cover 1898 (1352 surveyed and 546 others) families during 1979-80, consisting of 624 small farmers and 1274 marginal farmers. The scheduled caste population identified in the block is 1423 of whom 57 beneficiaries are being covered during 1979-80. The grant for the block this year has gone up to Rs. 16 lakh as against five lakh last year.

P C. Roy is Chief Editor of Yojana group of Journals.

20 DPD/79—3



Women and children also offer their services at leisure in Poultry Scheme

To popularise the package of improved practices among the small holders 465 demonstration plots belonging to them were selected and made ready for various rabi, summer and kharif crops at a cost of Rs. 0 69 lakh. As a result of these demonstrations summer groundnut has become very popular among the cultivators Sri Keshavbhai R. Patel of Samrakha village reported that he made a profit of Rs. 4700 by producing groundnut crop in his land measuring 1.30 acres. His sense of satisfaction has to be seen to be believed. Next summer more land is expected to come under groundnut cultivation and bring additional income to the growers. To accelerate the process of growth 138 improved agricultural implements have been distributed to small and marginal farmers of the block beside nine pumpsets/electric motor to increase irrigation facilities. A sum of Rs. 2.00 lakh has been spent as subsidy to provide 442 milch cows to small/marginal farmers and agricultural labourers so that they may persue dairy as a subsidiary occupation. At a subsidy of Rs. 2 09 lakh 392 bullocks and 16 bullock carts at a subsidy of Rs. 0.07 lakh were given to assist in cultivation of crops and transportation of agricultural commodities. Ninetytwo storage bins for storage of food crops have been distributed to small and marginal farmers, the amount of subsidy being Rs. 0 24 lakh.

An attempt has been made to subsidise and encourage development of fisheries through IRD programme. In Lingda, a village with a population of 3500, a subsidy of Rs. 5000 was given to Fishermen's Cooperative Society for purchase of a nylon net and supply of fingerlings. The village tank which the society got on a five-year lease, was stocked with fingerlings which fetched an earning of Rs. 6000 this year by the end of August, 1979

Most spectacular is the achievement in the village Bhatarpura. The launching of a community lift irrig tion scheme has brought about a complete transform tion of the economy and life of the people who liv earlier in a state of utter despair. The scheme cover a command area of 145 acres, of which 110 ac belong to small and marginal farmers Among the beneficiaries in the command area only six are l farmers When the monsoon crop failed due drought, the villagers worked heart and soul to com lete the project before the rabi season began In t they succeeded. By the end of November 78 th could put their once-dry land now richly irrigat under the plough to yield three crops Irrigatio facility brought in its train a chain of development assistance in the shape 50 milch cattle, nine bullock five improved agricultural implements, two stora bins, 28 wheat mini-kits, four groundnut demonst tion plots, two hybrid bajra demonstration plots a 13 cattle sheds—a convenient mix of SFAL and IRI The burst of a new life in the village has also facil tated its opening to the world outside through an ap proachable road, which we saw under construction

Training

Special courses are being conducted at Saisa impart training in electric motor repair and wiring 126 persons so that they can find avenues for earnin money after completion of training. It is expected th their technical skill would be useful to meet the day day requirement of the village economy well set industrialisation. The trainees receive stipends and d not have to pay any fee. Equipment kits are also bein provided to the needy persons through loans from th commercial banks.

Even a cursory look at the IRD programme at Anand can be both rewarding and provoking. It shows development probably at its best in Gujarat at the block level within short time-frame. The sign-posts of progress are quite visible. The poultry scheme has gone well with the beneficiaries as it enables the womenfolk and children also to offer their lending hands at leisure. But this is possible only when the poultry sheds are not far away from their place of residence. As far as possible the authorities concerned should try to help set up the sheds inside the villages if government or Gauchar lands are available. We are told that electricity supplied to the poultry shed had to be paid at industrial rates although poultry keeping is normally taken as an adjunct to agricultural operations. As a result the beneficiaries have to pay at higher rates. Since their holdings are small and their operations generate additional income to keep them above subsistence level, the individual beneficiaries identified under IRD scheme should be charged at a lower rate. The number of birds allowed per beneficiary is 100 and the area allotted is 300 sq ft. Increase in number and area would surely make the units economically more viable Two hundred birds and an area of 450 sq ft we felt would satisfy the people we met at Zankhriya The Central Government may consider the proposal keeping in view the changes effected on these lines by the State Government It was brought to our notice that there are statutory bodies who manufacture food but do not sell them to the poultry cooperatives on credit although the food is cheaper than that of the private manufacturers who offer credit facilities to the poultry cooperatives Quite obviously the ground for reconsideration is strong. Priority in allocation of cement, wire nets and electricity required for poultry development should be given. The members of Samarkha Milk Producers Cooperative Society reported that the price of milk given to the producers are not remunerative They want the price to be raised in the interest of the milk producers who suffer from a sense of neglect in view of the increased benefits given to organised workers in Amul Dairy Cow breeding is most likely to suffer if irrespective of the fat content better price for cow milk is not assured

Milch cattle and buffaloe programme as usual has an easy acceptance because of the immediate benefit it gives to the beneficiaries. The demand for milch buffaloes and cows have gone up, resulting in an inordinate increase in their prices We were happy to see at Samarkha an artificial insemination centre for breeding of good quality animals with provision for necessary guidance in fodder development, feed development and health cover.

As a catalytic agent it appeared that the lift irrigation scheme is extremely successful and is in great demand. Provision of water to a parched land can work wonders and change the entire psychology of the people as was evident in Bhatipura. The demonstration plots have inspired the farmers to make experiment in changing crop pattern. The news of success attending the experiment in groundnut cultivation is spreading like wild fire. It is widely believed that very soon a large number of farmers would take to raise this new crop which will bring better income to the growers and help boost the production of groundnut.

The rural artisan programme, as is being conducted at Satsa, was disappointing The training is far from adequate and unrelated to practical field work. Since the amount of money spent on this programme is substantial in view of its importance in employment generation, no time should be lost in making a survey of the requirement of trained manpower in various trades and reorienting the training programme accordingly. At the same time particular attention needs to be given to provide the training centres necessary tools, implements and workshop to make the training useful to the trainee as well as to the emerging rural industries. The District Industries Centre should take active interest in the reorientation of the training programme which is going to quicken the pace of rural industrialisation.

Under the IRD programme the scale of subsidy is 25 per cent of the capital cost for the small farmers and 33-1/3 per cent for marginal farmer and agricultural labourers Only in community lift irrigation works it is 50 per cent for the latter. As they constitute by far the larger group, it is desirable that the element of subsidy should be made 30 per cent to all types of beneficiaries in all cases except in lift irrigation The existing arrangement is incongruous as the element of subsidy has already been fixed at 30 per cent of the total cost in the case of the rural artisans under the rural artisan programme A uniform rate of subsidy will also considerably reduce the clerical workload of the Project Officer, who is greatly handicapped for lack of adequate staff, particularly at the Gram Sevak level.

There is no doubt that the additional input of administrative effectiveness has started showing results in the small pockets covered by IRD programme. The pace of development has quickened in the neglected areas where the poorest of the poor were doomed to live a life of endless suffering and destitution. The age-old grip of poverty is losing its hold on the identified beneficiaries of the scheme who are also becoming active partners in the great battle against the bane of their existence on earth. It is however, too early to speculate the durability and universality of the success achieved when external intervention for local involvement will cease. ☐

Housing the Poor

G. C. Mathur

A shelter is amongst the basic needs of human beings. But people who are poor are unable to have even a satisfactory shelter as they barely eke out a living. With the fast increase in population the deplorable housing conditions of the poor has been aggravating and has become a matter of grave concern. The inhuman living conditions in slums and squatter settlements in which poor people live in urban areas especially in metropolitan cities and the need for improving the apalling housing conditions bordering to primitive way of life in rural areas are being increasingly recognised as amongst the foremost problems of our times.

Housing Shortage

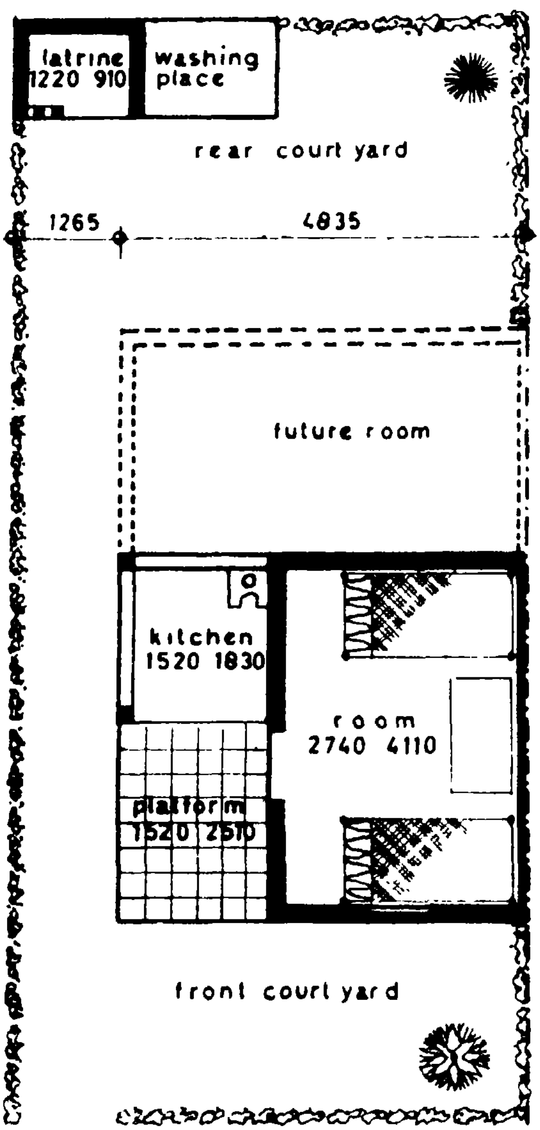
With the fast increase in population the shortage of housing has been increasing year after year. At the beginning of 1979 according to the estimate of the National Buildings Organisation there was a shortage of



19.7 million dwelling units in the country, of whi 14.8 million was in rural areas and 4.9 million in urb areas. To wipe out the shortage, we are required build at the rate of some 50 lakhs houses every ye over a couple of decades. A housing programme such a colossal magnitude calls for mobilisation of hu resources such as financial, land, materials and skills

In the face of severe constraints on financial resour which are required on priority basis for agricultur development for producing required amount of foo growth of economy for creating more employment op portunities, provision of infra-structure facilities fo industrialisation, etc, it does not seem possible to hav adequate resources for embarking upon a gigantic pro gramme of housing. Moreover, already in urban area particularly metropolitan centres great scarcity of lan is being experienced and its prices have shot up cons derably. Scarcity of building materials such as brick timber, cement, steel, etc. has come about. Skille labour has also become scarce and costly in the wak of new employment opportunities in Gulf countries

Despite these serious hindrances, we can ill-afford t overlook the problem of housing the teeming million A massive programme has to be devised for housir the poor. As per the latest estimates, some 50 per cei of our population is said to be living below the povert line. At present it does not seem possible for the to afford to build a house of their own, as a hous though a primary need, is one of the costlier things th one can have. But, without a healthy dwelling how ever modest it may be, and essential services such a potable water supply, sanitation and drainage it is no possible to lead a healthy and dignified life. The pro vision of community facilities like health centre schools and other community needs and public utiliti such as roads, transportation and communicatio systems, electric supply, etc. also makes a signific contribution to human and social development. An integrated programme of development, both in urba and rural areas with improvement in housing as a essential component is therefore being increasingl adopted. The Minimum Needs Programme as outlined in the Fifth Five Year Plan had been aimed to promote this objective both in urban and rural areas. In the Sixth Five Year Plan (1979—83) achievement of up graded targets of minimum needs for improving the standard of living of the poor, has been envisaged



House For Rural Land Less

G.C. Mathur, is Director, National Buildings Organisation and U.N. Regional Housing Centre for ESCAP, New Delhi

Provision of house sites to landless agricultural workers and environmental improvement of slums in urban areas are important items of the Minimum Needs Programmes, which have been accorded high priority. In some States notable progress has been made in building houses for the rural poor on the sites alloted to them. In metropolitan centres great importance has been given to sites and services programme for urban poor.

In order to give accent on improving the housing condition of the poor, it is incumbent to adopt a realistic approach keeping in view the scarce resources that can be provided for housing. The strategy for housing the poor both in urban and rural areas has, therefore, to be based on self-help to the possible extent, more intensive land use, improved use of local materials, growing house concept, construction of house in stages and provision of essential services, community facilities and public utilities. Based on these concepts, the National Buildings Organisation has evolved designs of low cost houses for the rural and the urban poor

House for the Rural Poor

To improve the housing conditions of the rural poor a high priority programme of provision of house-sites free of cost to landless agricultural workers, agricultural families whose number is estimated to be around 12 million in the country has been taken up since 1972 So far, over 76 lakh hous-sites have already been alloted to the beneficiaries in different States Some State Governments have also initiated large schemes for constructing houses or for assisting the beneficiaries to build modest homes

As per the National Buildings Organisation, allotment of a minimum house-site of 83 sq. metres (100 sq. yds.) has been proposed to each landless agricultural family. To begin with construction of one room of 2.7m×4.1m (9'-0"X 13'-5") and a separate cooking space of 1 52m×1.83m (5'-0"X6'-0") with a platform, a sanitary latrine and bathing place has been proposed. Provision for construction of one more room for future expansion has been kept Space in front of the house is left for outdoor family needs and at the rear courtyard is intended for keeping cattle, fodder, etc. Figure on previous page shows 2 typical arrangements of the dwelling providing a plinth area of 20 00 sq metres

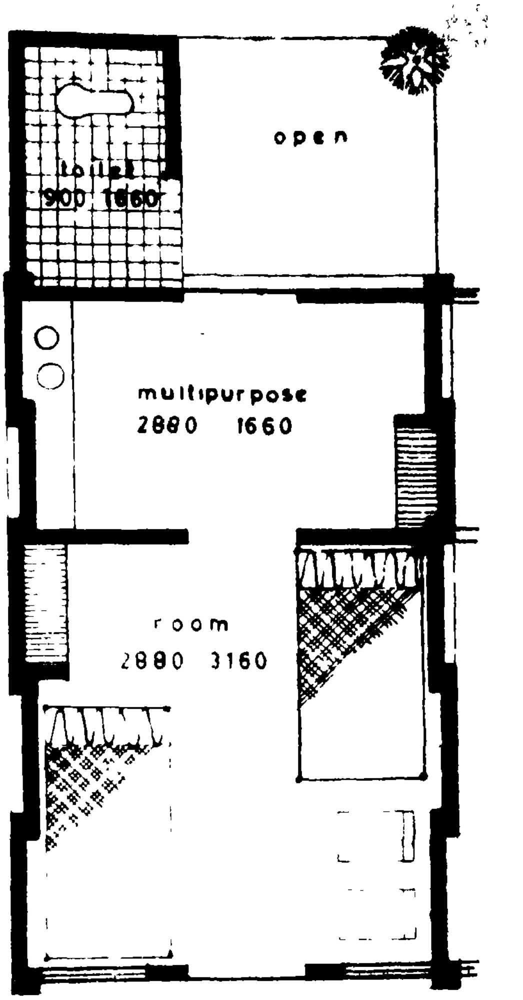
Two types of constructions have been proposed—

(a) A house having walls made of sun-dried bricks with water-proof mud plaster and thatch-roof treated with fire retardant treatment, can be constructed at a cost of only Rs 1,800/- when built through self-help

(b) The house with burnt clay brick walls and clay roofing tiles, can be constructed at a cost of Rs 2,500 when built through self-help.

The above costs are based on prevailing rates in Delhi. Obviously in rural areas the cost of construction would be much lower.

Water proof mud plaster comprising of mud, bhusa and about 5 per cent bitumen emulsion is used on mud walls for making them water proof. To make the thatch fire retardant and water repellent, the top and the bottom surfaces are plastered with bitumen stabilised mud and spraying bitumen solution. This design concept and techniques for water-proofing of mud plaster and fire retardant of thatch-roof have been widely publicised.



House for the Urban Poor

In urban areas, provision of sites and services fo the urban poor is being made in many metropolita centres and important cities on which the beneficiarie are expected to put up a modest home largely throug self-help The National Buildings Organisation ha evolved a design concept of a "Shelter House" accor ing to which a dwelling unit of 17.15 sq. m. (180 s ft.) can be built in a plot of 21 sq. m. (25 sq. yd comprising of 9.10 sq. m. (9.78 sq ft.) and anoth multipurpose room of 4.78 sq. m. (54.05 sq. ft.) wi toilet, open to sky to begin with. The houses are be constructed in a row. The walls of the houses a to be made of half brick in Z-shape constructio Adoption of three types of low cost roofing syste have been proposed with a view to economising t consumption of cement and steel and also to incre the pace of construction of the roof : (i) Precast bri panels on reinforced concrete joists, (ii) Precast re forced concrete solid planks on R.C. joists and (Precast reinforced concrete channel units.

According to the design, the house can be constr ted in four stages within the cost range of Rs. 2,50 Rs. 3,700 depending upon the four different stage construction adopted and self-help employed.

Continued on page

Health for all by the turn of the century

Gujarat Style

Gujarat State has been adjudged as the best at national level in family welfare activities for the year 1978-79. Our assistant editor R. R. Rao who visited the State and observed their activities from close quarters gives here a vivid description of his observations.

CONVICTION, dedication, and whole-hearted involvement are the essential ingredients for the socialisation of the personal problem in the larger interest of the country. Exactly these are the weapons, supplemented by efficiency of doctors and support from the people, with which Gujarat State has been waging the war against the population explosion. As a result the State has been adjudged the best at the national level for the year 1978-79 in the following :

(a) Best performance in voluntary sterilisations
(b) Best performance oral pills.
(c) Best performance in Mother and Child Health (M.C.H.)

The State will be given Manpatra and Trophy for each of the above three. Also Gujarat bagged a special Award (shield) for showing best results in January 1979 both under Family Planning methods and MCH. and a cash award of Rs. 30,000 for the best performance district in Zone-I (Jan. 79—March 79). It had not been a cake walk for Gujarat to arrive at the National Awards. The path was full of thorns like social inhibitions, shortage of medical personnel, medicines, hospitals and so on. To overcome all these hindrances the State has been following a strategy which is quite interesting and worth emulating.

Motivation

Total involvement and commitment of Government and people at all levels is the key for the success of Family Planning programme in Gujarat.

Government of Gujarat had realised that the success of other development schemes depended upon the effective implementaion of Family Welfare Programme. Otherwise the fruits of economic development cannot be enjoyed by the people. So Gujarat paid maximum attention to the Family Welfare programme, during 1778-79.

Immediate task before them was to gear up the Government machinery, at various levels The Gujarat Minister of Health convened a number of meetings at State, Regional and District levels, and exhorted the Secretary, Joint Secretary, Directors and other programme officials to join the crusade against the wild growth of popoulation, and involve themselves whole-heartedly A detailed plan of action had been chalked out.

The Government of Gujarat understood that the job at hand was so stupendous and delicate that it could not be done by the Family Welfare Department alone. So officials of all the departments were involved by convening twice in the year special meetings of District Presidents, Mayors, District Development officials, collectors and Municipal Commissioners under the Chairmanship of the Chief Minister. In another meeting Municipal Presidents, Chief Officers were asked to jump into the battlefield to stop the birth of extra and unwanted children.

Thus the Government of Gujarat, by ensuring the support of both official and non-official machinery, brought on the right track the Family Welfare programme which has been pursued at national and state levels without any aim and without formulating any tangible policy. Also with the change of Government the programme has been taking different courses depending upon the attitude of the party in power. So to the credit of the Gujarat State it should be mentioned that the entire community had been involved in the gigantic task of motivating the people. Speak to anybody of your choice, a politician, a teacher, a postman, a health worker, a doctor, you find him bubbling with pride and beaming with joy of having done something concrete, having motivated some cases and having contributed his mite to achieve the goal. At Ambaliyar village Miss Bhagwati Ben Patel of about 20 years age, has been serving as Community Health Volunteer on part-time basis. This timid and unmarried health volunteer told us that she motivated one vasectomy case of a Harijan also, in addition to five tubectomy cases since April 1979 In these days of unchanged rural society, imagine the boldness of an unmarried girl who otherwise lives with her parents, speak on family planning that too on vasectomy. So much deeprooted is the family welfare programme in Gujarat. Their method of approach is through interpersonal communications, group discussions, filmshows and song and drama programmes. To quote another instance take the case of Mr. Madhavlal Govindlal Patel aged about 45, a community leader. He has not only been preaching the concept but also has undergone the vasectomy operation about ten to fifteen years ago when the Family Planning programme had not gained any momentum.

Not only that, his daughters and daughters-in-law were sterilised after having three children. In short the entire community in the State marches to the beat of family welfare drum.

Enhanced incentives

On account of the involvement of official and non-official hierarchy, the head of each organisation right from State down to the District Panchayat, Taluk Panchayat and Municipality level, had come forward to give some kind of incentive to the acceptor, motivator, doctor and so on.

To the incentive amount of Rs. 70 sanctioned by the Government of India to an acceptor of sterilisation, the State of Gujarat added Rs. 45/- for vasectomy and Rs. 10/- for tubectomy and the local body paid from its own funds Rs. 10/- as additional incentive money Thus an acceptor of vesectomy in Gujarat gets Rs. 125/- and of tubectomy Rs. 90/-.

To attract people from lower socio-economic group some more additional benefits have been offered. Agricultural labourers who are allotted plots, are also given Rs. 300/- each to construct own houses if they undergo sterilisation. An agricultural labourer and a small farmer owning less than two hectares of land are given Khadi cloth worth Rs. 50/-.

A motivator of a vasectomy case gets Rs 20/- in Gujarat State. Government of India has not provided any incentive for a tubectomy case motivator. But Gujarat has announced for the first time Rs. 10/- as motivation incentive for tubectomy. To encourage the Medical Officers and paramedical workers of PHC and Urban Family Welfare Centre, cash awards are announced. If a centre sterlises 10 per 1000 population the Medical Officer gets Rs. 300/- and each paramedical worker gets Rs. 200/-.

In addition, there is a galaxy of cash awards to heads of local bodies, in order to invoke their active support. Factories having 500 workers or more get cash incentives of Rs. 15,000 and Rs. 10,000 respectively if they motivate 100 per cent and 75 per cent of eligible couples to accept terminal family planning methods.

For best overall annual performance Sardar Patel Shield is awarded by the State and another shield by Gujarat State Branch of Indian Public Health Association, both being roving. And there are awards and prizes like Janta Personal Accident policy, household utensils like radio, alarm clock etc. varying from district to district and taluk to taluk. In short the Gujarat Government has tried to solicit the cooperation of all persons, institutions and organisations—private and government and also attract more and more sterilisation cases by announcing special awards, incentives prizes in cash and kind. The cost of various incentives from state funds amount to Rs. 1.47 crore.

Also Gujarat has been trying to mould the minds of future citizens of India, by introducing lessons dealing with population explosion, family welfare and importance of small family. Students upto 12th class and also in college education, have to understand these concepts as a part of their sociology.

Laparoscopic Tubal-Ligation Technique

Gujarat is the first State to introduce the Laparoscopic Tubal-ligation technique of tubectomy. It is quicker than the other method and so has become more popular in a short time, particularly in rural areas. About ten doctors are trained in this technique of inserting a ring round the uterus without opening the abdomen and the operation does not take more than five to six minutes. The lady can go home in four to five hours after the operation. The operation does not leave any cognisable scar on the body. Even though Government of India has not recommended this as a safe method without any future complications Gujarat has adopted this as one of the techniques of tubectomy. Regarding future complications, time only can say but as far as the persent response to and success of Laparoscopic technique are concerned they have been very encouraging.

As the patient can go home after four or five hours and take up her day to day work, unlike the ordinary tubectomy operation which requires the patient to be in bed for about six days, Laparoscopic Tubal-ligation technique has been welcomed by ladies who have to work daily to earn their bread, who belong to certain groups and communities like Adivasis and Muslims whose men folk are adamant and not convinced of family planning. After all the lady has to bear and give birth to child which is nothing short of a rebirth to herself. So realisation dawns early on mothers.

During the year Laparascopic tubal ligation camps were organised in district and sub-district hospitals like Rajkot, Junagarh, Bhavnagar, Surendranagar, Sabarkantha, Jamnagar, Amreli, Gandhinagar and Ahmedabad. Thus the Government of Gujarat deserves a pat on the back for its boldness in venturing into a new era in tubectomy operations through Laparascopic tubal-ligation technique which has not been recommended by the experts at national level for various reasons.

It does not mean that in the State there is only this method of tubectomy and not the other open surgery. Side by side both are encouraged depending upon the availability of expertise, machinery, accommodation and preference of the acceptors.

Progress in Figures

Contrary to the popular belief that statistics is the biggest lie, the figures quoted by Gujarat are true to the last man or women sterilised. Each village maintains a register in which all the particulars of eligible couples are recorded and updated as and when necessary. Once an officer was asked to enquire into a complaint. The figures of a PHC did not tally with those in the village register. The enquiry officer reached the village with the PHC register in hand. The two registers were compared and arrived at a name, a man, who was sterilised as per PHC register but not according to the village register. That man, who was summoned to the Panchayat Office, was no other than the brother of village Sarpanch. He admitted that he underwent the operation but did not inform his brother for obvious reasons. Such is the accuracy of the records being maintained in the village as well as at other levels.

In Gujarat, as on 1 March, 1979, there were about 320 lakh people living in 19 districts covered by 251 PHCs, RFWC, 1920 sub-centres, 147 Urban Family Welfare Centres. Out of these 251 PHCs, 64 are in tribal areas.

As a result of the above mentioned four-pronged approach-intensive education, higher incentives, prizes and political commitment—the Gujarat State could secure 197367 sterilisations in 1978-79 against the annual target of 192500. In other words percentage of target achieved is 102.5. During the year 1978-79 more than 19000 tubectomies were performed by Laparoscopic Tubal-ligation technique.

Out of the total sterilisations 54,195 are vasectomy and 143172 tubectomy cases. In rural areas 152326 sterilisations were conducted and the remaining 45041, on urban residents. Against the 29000 target of IUD, there were actually 35301 insertions that is 121.7 per cent. Out of this 35, 301 IUD cases 19,997 were done in rural and 15,304 in urban areas. There are 205379 C.C users against the target of 97,600, an achievement of 210.4 per cent. There are 21,490 cases of medical termination of pregnancy and 264902 persons using the oral pills.

Out of 251 PHCs, 29 PHCs achieved 10 or 8 sterilisations per 1000 population and the members of staff of these PHCs are eligible for cash awards. Out of these 29, 10 PHCs belong to tribal areas and 19 in non-tribal areas.

About 39.5 per cent of wives whose husbands have been sterilised, 43.6 per cent of ladies tubectomised and 76 per cent of IUD are below 30 years of age. The mean age of a lady of vasectomised husband, of tubectomy and IUD, work-out to be 31.9, 31.1 and 27 years respectively. The number of children to 59.2 per cent of sterilised men, 42.3 per cent of women, and 81.3 per cent of IUDs is three or less than three whereas the average number of living children to all the acceptors of each category come to 3.4, 4.0 and 2.5 respectively.

In Dantali village there are 252 eligible couples out of which 92 have been sterilised, two are using IUD and 14 contraceptives. In Sarsa block out of 13,460 eligible couples 893 sterilisations were conducted, 225 IUD insertions were done, 87,768 nirodh pieces and 1534 oral pills were distributed. In Khaira district, supposed to be very advanced of all, politically, socially, and economically, has 4,42,859 eligible couples and 2,14,113 have been sterilised, so far. In 1978-79, 24,806 persons and in 1979 upto November, 8689 were sterilised. IUD insertions were done for 4779 in 78-79 and for 2959 in 1979 upto November.

Now to the position of Gujarat in India Percentage of couples protected upto August 1979 in Gujarat is 30.6 against the all India figure of 21.8. Through sterilisation 27.6 per cent of couples were effectively protected in Gujarat whereas the percentage at national level stood at 19.8. In Gujarat 27.6 per cent of the couples have been sterilised and 19.8 per cent in India. Couples with IUD insertions are 1.2 per cent in the State and 0.9 per cent in India. Through other methods 1.8 per cent of couples are protected in Gujarat and 1.1 per cent in India.

MCH and Public Health Schemes

Gujarat State gives guarantee of the child's health upto the age of 14. Community Health volunteer, as its very name suggests, is not only a motivator of terminal methods of family planning but is the villagers' friend, philosopher and guide. Though he is a part time worker having his own profession he is given intensive training in first aid and a kit of medicines worth Rs. 50. For small diseases he gives medicines and those beyond his capacity are referred to the PHC. The cost of medicine, food and transport are entirely borne by the Government. Against the target of four lakh, about 4.13 lakh pregnant mothers have been immunised with Tetanus Toxoid in 1978-79. In the same period about 6.67 lakh pre-school children of below five years of age were protected from Diptheria, Tetanus and wooping cough, thus achieving a 123.6 per cent of the target. Diptheria and Tetanus had been prevented in the case of about 955612 school going children of 6-12 years of age group. Iron and Folic acid tablets had been distributed to 947835 women and 896775 children to prevent nutritional anaemia. About 1327914 children in 1—5 years of age group were given Vitamin A capsules.

To improve the environmental sanitation some new innovations are made and introduced with varying success. For example construction of Bavla type rines which are more hygienic is being encourag This looks almost like a sceptic latrine but the n soil is collected in a construction of 2.5X2.5X10 dimension. Life of this device is 10 years. Smoke Chulas which do not blacken the wall are also in duced. Another device is soakage pit which helps k the yards and streets clean and dry by draining do all the sewage and water. All such new introducti are supplied to the villagers at cheap and subsidi rates. But it appears that they have yet to gain po larity. After-all centuries old habits die hard. In D tali village out of 253 houses 98 have pits, 12 Ba type latrines, 55 smokeless chulas, and 12 urinals. Sarsa block there are only 84 Bavla type latrines. environmental sanitation the State has to go a lo way.

Some Doubts

While fully appreciating the sincerity of the Guja State to apply a brake to the population growth, critical eye cannot ignore some aspects of the progra me. It is observed that higher an officer is, more the incentive amount or award. Further an officer the district level who is already paid decently is r lured by a sum of Rs. 200. Also he does not take pe sonal interest to motivate but at the maximum will instruct his subordinates in the field to do the jo For that reason he is not to be rewarde So the money allocated to give awards to high officers should be diverted to enhance the incenti amount to the person who is at the grassroot.

The percentage of acceptors among Muslims is abo four in Gujarat, in the year 1978-79. Also son Adivasis are resistant to the family planning pra tices. It seems the State has not done anything sub tantive to woo them except occasionally arrangi some film shows or group discussions. We may s that they belong to sensitive minority group and very difficult to break the barrier. But 15 to 20 yea ago the same situation was obtaining in India eve among Hindus.

Conclusion

In conclusion it can be said that certainly Gujara has made good strides in turning a new leaf in th field of public health The secret of Gujarat's succes in family planning is the whole-hearted involvement o the entire community, all departments of Governme and politicians as well. Also the State deserves fu appreciation of its adventure in Laparoscopic Tubal ligation technique. Remembering that population grow in leaps and bounds the State should not rest on it laurels but maintain the tempo for some more year if not decades by framing and strictly following family welfare policy which does not dance to th tune of the party in power.

If this message of community involvement reache nooks and corners of the country, it will not be diffi cult to realise the World Community's aspiration o "Health for all by the turn of the century". □

Housing the oor *(Cotinued from page 15)*

The typical designs of low cost houses evolved by NBO for the urban and rural poor are being adopted in different regions in the country with such modifications as are required to suit local conditions, particularly as regards availability of materials. The construction techniques proposed by NBO provide greater protection in areas which are prone to heavy rainfall and floods, cyclone and earthquakes.

The NBO would gladly provide technical guidance and assistance in building houses for the rural poor within the cost range of upto Rs. 3,000 and for the urban poor within the cost range of upto Rs. 5,000 □

A View Point

Integrated Rural Development

Virendra Agarwala

THERE can be no doubt about the overall improvement that has taken place in the Indian economy during the period from 1960-61 to 1973-74 in terms of the economic growth But the rural poverty has increased both in magnitude and intensity. This clearly shows that economy growth by itself does not lead to a reduction in rural poverty For the country as a whole, the net national product has increased in real terms by 52 per cent over this period for 14 years but the per capita produce has increased by only 14.2 per cent because of the growth of population by over 140 million during the same period. The per capita final consumption during the same period increased by 13 4 per cent for the country as a whole. It is, therefore, reasonable to expect that the period should show at least some decline in poverty or the proportion of the poor among the people. Economic progress needs to be measured not only by the growth of the national product whether in the aggregate or per capita terms but also by the extent to which this growth is accompanied by the dimunition of poverty.

in 1961) increased by 6 4 million during the p to reach 27 1 million in 1971. The rise in the num ber of all poor rural households was thus 30.9 pe cent compared with a rise of only 12.2 per cent i the total number of all rural households. The RB has confirmed that rural poverty has increased dur ing the period 1961—1971.

Containing Rural Poverty

Who are those rural poor and what can be done t better their condition and give them larger return economic from growth ? The rural poor shoul pre-dominantly consist the agricultural labour house holds and small landholder with cultivated holding c less than 5 acres and particularly less than 2·5 acre: The two groups will also include village artisans, prc gressively thrown out of their traditional occupation Some of their crafts are on the decline, while man others are afflicted by the productivity and poor ir come generating capacity. If all households posses ing assets below Rs 2,500 are taken to be weaker sec tions needing immediate attention by the remov:

A massive programme of agricultural and rural development is a sensible course for the country to adopt. Virendra Agarwala, in this article suggests that in addition to evolving policies and formulating programmes to benefit the rural poor, we should monitor the programmes with strong administrative commitment in assuring that benefits in fact percolate to the rural poor.

The Reserve Bank of India has conducted several studies which indicate that while the number of cultivator households increased by 10 8 per cent over the period, the number of such households that can be classified as poor in 1971 (i.e , having a total value of assets of Rs. 2,500, compared with Rs 1,000 in 1961) was more in 1961 by 27 per cent. In other words, the number of poor cultivator households increased at nearly three times the rate of increase in the total number of cultivator households, the absolute figures being 10 3 million in 1971 compared with 8.1 million in 1961. During the same period, the number of *cultivator*-households who did not have any of the household articles on the basic minimum value of Rs. 5 in 1961 and Rs. 10 in 1971 increased from 750,000 to 2.1 million. Agricultural households, increased during this period by 14 1 per cent compared with 10.8 per cent for cultivator households. But the proportion of agricultural labour households owning land declined from 12.6 per cent in 1961 to mere 5 5 per cent in 1971, and the share of land in the total assets of all agricultural labour households came down from 29.2 per cent to 17.1 pe rcent Taking all the rural household together, the number of 'poor' households (total value of whose assets was Rs. 2,500 in 1971 and Rs. 1,000 of poverty, their number comes

Virendra Agarwala is a former M.P.

of poverty, their number comes down to near 27 millions There are several schemes meai to encourage them to acquire the productive asse' like milch cattle, implements, etc. and to raise th productivity of whatever productive assets held b them, substantial improvement in their economic statı will largely depend on the extent of generation ‹ employment opportunities for them.

How do we bring about a decline in, let alone a outright abolition of India's rural poverty. An ol vious answer and one which is also accepted official quarters is to make a frontal attack on tl problem of rural poverty by directing the process ‹ development both in production and distribution to tl rural poor in the country. By itself however it wou not work Unless there is structural change in pr perty relations in rural India the poor get an adequa share of productive assets including land, implemen inputs and credit, any programme of a direct atta on rural poverty is not likely to bring about a redu tion either in its magnitute or its intensity. T Government has taken a number of policy decisio to alleviate the conditions of the rural poor.

What we need is not only institutional reform l also an entire re-oreintation of the national econo

policy in several directions. Generation of more employment opportunities in agriculture by extension of irrigation and power for rural use, particularly in the non-agricultural sector by programmes of village industrialisation and support of small and cottage industries, by massive programmes of rural works aimed on expanding and improving the efficiency of infrastructure facilities and thereby also improving the base for increase in rural productivity. What we urgently need is the organisation of the rural poor into trade unions which will enable them to exercise pressure on the local rich for betterment of their wages and working conditions. There is a reasonable hope of starting a trend towards a decline in rural poverty as it will gather momentum over time and ultimately result in the total abolition of rural poverty.

Social Justice

We as a nation have accorded top priority to the programme of rural development largely for the reason that the fruits of development planning have not yet percolated to the lowest sections of the society, whose welfare is the cornerstone of national policy. The question today, therefore, is not a problem of economic and social planning but of social justice. The farm lobby has found itself so enthusiastic that it has been trying hard to gain certain major concessions for the rural community which has largely benefited the rural rich. The Minister for Agriculture has recently advised the states to abolish existing taxes and levies on agricultural incomes. He has also disclosed that the states have been advised not to lay any new taxes on agriculture which would presumably include agricultural incomes. On a different occasion, the Finance Minister was bluntly told to abolish excise duty on the Khandsari and reduce it on mill sugar and so arrange finances for purchase of sugarcane and cotton by the mills and public agencies at what is called remunerative prices for the growers. Practically, all major food items like wheat, rice, jawar, bajra have been granted higher remunerative prices because the Government has accepted the principle of parity. The Commerce Ministry has also proposed the extension of support price operations to a variety of agricultural commodities among them are tobacco, potatoes, onions and oilseeds. Our agricultural production has crossed the record figure of 127 million tonnes and a higher support price for various agricultural commodities is sure to ensure higher incomes to the farmers. Since agriculture has been on the growth path for the last four years at least and has generated large additional incomes successful resource mobilisation must mop up atleast a part of the new incomes generated in agriculture. The political leadership lacks determination to do so. Instead, the farm lobby has begun talking in terms of exporting surplus agricultural commodities though the world prices of these commodities are not only competitive but lower than what is prevailing in the country. But still the Government is exploring the possibilities to promote exports of farm products. It will certainly have an adverse effect on domestic market. Though we do have buffer stock of 20 million tonnes but still there are millions in our country who go hungry particularly in the rural areas. No economy can have any meaning unless some strategy is immediately evolved to feed these hungry million.

The Union Government had introduced 'Food For Work' as early as April 1977 with an object to ease the foodgrains stock which was becoming a physical and financial burden on the country as well as to enable the jobless in the countryside get some work which in its turn helps to ease the pressure of the unemployed in urban areas. This programme is expected to generate 400 million man-days of additional employment during this year. It is officially estimated that the programme is likely to engage 8 to 10 million people for about 3 months. Between May 1977 and April 1978, the number of registered job seekers went up by 1.08 million to 11.4 million. One of the reasons for the rise in the number of unemployed landless workers has been the lack of the work opportunities The 'Food for Work' programme is precisely a scheme which should help in providing such opportunities. Every effort should be made to extend it into a long-term project. Allotment of foodgrains for next year has been kept at 1.5 million tonnes. The scheme is laudable but has not been able to make any dent to tackle the problem of rural poverty.

It is not enough to evolve policies and to formulate programmes to benefit the rural poor but what we need today is to monitor the programmes with strong administrative commitment in assuring that the benefits percolate to the rural poor.

A massive programme of agricultural and rural development is only a sensible course for the country to adopt at the present juncture. This, however, does not mean that we should pay higher prices for agricultural commodities and charge lower prices for agricultural inputs as well as reduce land taxes. What we need is direct transfer of public sector resources to the development of the rural sector and creation of additional job opportunities. It is desirable that we devote attention to the distribution aspect of our growth process. The Government is committed to integrated rural development because its objective is to provide the conditions for evolving a more equitable and just society in which all people are accepted as having both the right and opportunity to earn, to achieve and to live as self-respecting human beings. Its two-fold objective of integrating the poor into the national socio-economic and political fabric and creating and developing socio-economic viable rural-urban communties, makes the organisation of the rural poor both purposeful and timely. When organising the rural poor, resistence and hostility expressed by the elite for poverty related programmes can be expected to disturb the status quo and therefore, challenge the domination of the elite over the rural poor. It is not enough to evolve policies and to formulate programmes to benefit the rural poor but what we need today is to monitor the programmes with strong administrative commitment in assuring that the benefit infact percolates to the rural poor. So long this is not achieved, the future looks bleak. □

People's Participation in Rural Development

Ashok Bapna

IN THE 1960s it was the green revolution which promised to put an end to rural poverty in the third world. Today it is 'People's Participation', as felt by most of the delegates from both the underdeveloped and developed countries at the World Conference on Agrarian Reforms and Rural Development (WCARRD) sponsored by the FAO in Rome last year.

As most of developing Asia is overwhelmingly rural in character, the governments of Asia have been for quite sometime concerned with developments of the countryside. But by and large such development efforts have failed to achieve the lot of rural people In some countries of Asia, the number of abjectly poor is growing rapidly, income disparities getting widened and unemployment, becoming acute The process of economic development has bypassed the rural poor cent outcome, started in April, 1977. Today this Programme has been well received by many states of the country and has become an important instrument of rural development. Various states are demanding more and more food grains under this programme. Till March 1979, the qantity of foodgrains utilised by various states in the country was 1.2 million tonnes, worth more than Rs. 165 crore. The employment generated under this scheme during the period was 2,827 037 mandays A special feature of this scheme is that the State Governments do not have to pay anything for such additional resources. The scheme has been modified to include both Plan and non-Plan works

The basic objectives of the programme are—

1 to maintain and create durable community assets and strengthen the rural infrastructure.
2 to generate massive employment in rural areas.
3 to raise wages of agricultural workers.
4 to cheapen food for the landless.
5 to release commercial credit for productive purposes.

During 1978-79 the Union Government would provide 1 5 million tonnes of foodgrains, as against 0.20 million tonnes in 1977-78, to people engaged in food for work programmes, which include unskilled as well as semi-skilled work like road building, irirgation programmes, food protection, soil and water conservation, land reclamation, repair of school and other public utility buildings and the like. Under the Programme, 1 5 million people "who are poorest of the poor", have got gainful employment. They do not get any monetary payment, but given fixed quantities of either wheat or rice.

Most of the developing countries in Asia are predominantly rural in character Therefore, it is but natural that the Governments in Asia are concerned with developments of the countryside. The delegates attending the World Conference on Agrarian Reforms and Rural Development sponsored by the FAO in Rome last year felt that people's participation was the only answer to end rural poverty in the third world. While discussing the Union Government's Food For Work Programme, the author holds that this programme needs to be strengthened and implemented effectively.

We in India have been talking of developing our rural areas for a long time. The report by an international research team which worked on the "inter futures project" says that nearly 300 million Indians or about half the population of the country will be living below the poverty line by the end of the century. According to the NSS (National Sample Survey) 294 million Indians today are below the poverty line, on the basis of an income of Rs. 61 per head per month in the rural area and Rs. 71 per head per month in the urban areas.

We used to say that India lives in its villages. Gandhiji went to the root of growth and nation building by emphasising the village self-sufficiency and community strength. With the inception of planning, various schemes of the rural development have been introduced from time to time In the last few years Rural Development Programmes have received a great attention of the government The primacy to rural development is also reflected in raising the total outlay in the Draft Plan (1978—83) for Rural Development to about 43 per cent as against 37 5 per cent in the Fifth Plan period More people will have to be provided jobs in the rural areas, where majority of the people live. The Draft Plan (1978—83) is expected to make a major impact on the unemployment situation.

Food for Work

Among the various schemes of rural development, Food for work Programme (FWP) has been rather re-

Ashok Bapna is a UGC Teacher Fellow in Economics. University of Rajasthan, Jaipur

Recently the F.W P has been crticised on two grounds It has been argued that the programme had, on the one hand depressed the prices of wheat, rice and other cereals and on the other, pushed up wages in the countryside. It has been said that any programme of this kind will reduce the supply of labour for agricultural operations and push up the going wage rate.

Economic Base of the Programme

The Programme has many optimistic points The impact of this programme on rural poverty has been considerable. In fact the Programme needs to be expanded further. Rajasthan tops the country in the utilisation of food grains under the programme. By March 1979, Rajasthan utilised 2.50 lakh tonnes of food grains The generation of employment was to the tune of 481.16 lakh mandays. Following works have been undertaken :

	Works completed	Works under construction
1. Irrigation tanks	5,675	853
2 Roads	9,733 km.	2,319 km

3.	Schools	3,051	4,576
4.	Panchayat garhs	789	1,271
5.	Drinking water tanks	4,991	2,719

The rural labour, which otherwise was lying idle has been provided gainful employment, which in turn has led to the capital formation. In fact our economy with surplus labour, is most suitable for such type of programmes. On one side the economy is using the idle rural labour for rural development and on the other side paying them in kind (thus having non-inflationary effect) and disposing of the surplus buffer stocks of foodgrains in the best possible manner. Since such people are not the effective buyers in the open market, prices of wheat will not be pushed down. So long the supply of the rural labour is more than the demand for it, wages of them will not rise. Therefore, there is hardly any need to think of slowing down this ambitious programme. It is likely that the F.W.P. may not have been supported by the rich formers. But the large number of farmers in this country are small and marginal and the benefits of such programmes are meant for this section of the society.

Since a tonne of grain is sufficient to meet the needs of around six adults, this means that with some leakages, around 12-14 million people have received full rations under the programme Underfed population has met its demand to a great extent. Since all the beneficiaries belong to the poorest segments of the rural population, the impact of the programme on rural poverty has been considerable. If the programme is expanded to distribute four million tonnes a year, its impact on rural poverty will be significant.

Future Hopes

The programme will become more and more important in the areas of scarcity of foodgrains. Currently the experience in the eastern part of the U.P. has a great relevance to this programme. Acute famine conditions prevail in the eastern parts of U.P. and it is being felt presently that unless immediate measures are taken to provide jobs by way of 'Food for work" programme, famine conditions will create a disaster. A quick survey of the drought hit areas shows that contrary to the claims of the state authorities that the F.W.P. has not evoked enough response, almost all the farm hands, at least in villages of these four districts (Basti, Gorakhpur, Azamgarh and Deoria) are seeking relief work. They are willing to undertake any work provided enough food is made available to them.

Bihar's performance under the programme is acknowledged to be one of the best in the country. The state government has demanded 3.75 lakh tonnes this year, as against 2.25 lakh tonnes last year. Seventeen districts in the state are in the grip of a drought and the Programme could provide relief to the affected people in rural areas. To combat the drought, they will need not less than 3.5 lakh tonnes of wheat for the programme.

14 Point Crash Programme

Recently the government is considering a fourteen-point crash programme to meet the drought situation in the country. In order to combat the drought, the government has envisaged a special food for work programme with a provision of one million tonnes of foodgrains to insulate the rural poor from hunger This will be in addition to the food for work programme already under way. The special food for work programme is to be so designed as to help the maximum use of available irrigation facilities.

The desirability of the F.W.P. both for economic and social reasons is well established. Success of Democracy would depend upon the involvement of the rural people in the developmental programmes. The programme has developed a sense of belonging among rural poors. The serious problem of rural unemployment has to be tackled. The F.W.P. has attacked on this problem successfully in many states of the country Rural reconstruction through F.W.P. will save country's monetary resources and thus it will have no inflationary effects. This Programme has a great relevance in the present context of Indian economy and must be strengthened, specially on the execution part

It is obvious that the successful implementation of this programme would not be liked by large farmers because it would raise the wages of rural workers and lower the retail price of food for them. But these are two of the main objectives of the programme, apart from the creation of rural asset and rural employment Above all the programme has evoked a feeling of participation among the rural poor, which in the words of recently concluded World Conference on Agrarian Reforms and Rural Development (WCARRD), "all that was needed was for the rural poor to become more closely involved in the planning and implementation of future rural development strategies". □

State Bank For The Weakest

TILL RECENTLY a large section of cobblers of Andamans led a miserable life. They were at the mercy of the middlemen and the mahajans i.e. the private money leaders. The cobblers were not united and so mahajans always exploited them.

At last the cobblers of South Andamans and a few other islands got themselves united and formed a Co-operative society. They have named it "Arundhathi cobblers" and "Tanners' Co-operative Society Ltd." and have registered it with the Registrar of Co-operative Societies, Port Blair. The main purpose of the society is to improve the economic condition of its members by arranging finance and other assistance for them from different sources.

The State Bank of India, Port Blair have come forward to finance the members of the society to enable them make purchase of leather and raw materials from the mainland. Earlier, the members were forced to purchase those items from middlemen and selling agents who used to charge exorbitant rates for the articles. As a result, the bulk of their income used to go into the pockets of the middlemen

The Bank sanctioned a sum of Rupees sixteen thousand to the society. This has helped the cobblers to be free from the clutches of the private money lenders. As a result yearly net income of each member of the society has reached over Rs. 50000. Now, they are not only repairing shoes, but also manufacturing They are no longer dependent on middle men Thus the State Bank of India, Port Blair has truely proved that it is the "Biggest bank for the Smallest man" by rendering financial assistance to the cobblers of Andamans who constitute the weakest section of the community. □

D. Som ; F P.O. Port Blair

A View Point

Industrial Productivity in Third World

Navin Chandra Joshi

THE CONCEPTUAL connotation of the term 'productivity' has somehow remained shrouded in mystery with mistaken beliefs and wrong interpretations. Even as the productivity movement is now about a decade and a half old in India, there has been no conceptual clarity and as such, no proper emphasis on its application. So far, it has not been considered a vital instrument for improving performance of enterprises in India or elsewhere in the Third World.

The price explosion in almost all developing countries has made it necessary that self-sufficiency in major articles of consumption should be achieved as quickly as possible so as to be free from the dependence on imports. Naturally, the only solution for this is to improve performance in all sectors of the economy, both in the existing as also in the future enterprises engaged in manufacturing or non-manufacturing business.

Productivity Technique

In the developing economies two most serious problems are those of inflation and unemployment. In order to tackle them effectively, productivity techniques appear to be the best solution. With the relatively low index of industrial production looming large in these countries, it is doubtful if the technique of financial and physical planning can really shake up their economy from its present sluggishness.

What are the factors that have contributed to the sluggishness of the economy, is a question to which we are not addressing ourselves. However, the mischief done by the low level of productivity, through the serious threat to targets of economic growth persists in greater dimensions. This is the greatest challenge for the planners of the Third World and more particularly, for the managers of their public and private sector enterprises.

Indeed, the problem is one of toning up the internal efficiency of enterprises through productivity measures. In this endeavour the top management has a sacred duty to put across the concept of productivity in its true perspective so as to allay any misgivings about it and also to enthuse their personnel at all levels to assiduously improve the totality of their performance. This, of course, the top management can do only when it is free from other 'pressing' problems These are the problems of raw materials, wagons, license for more production and so on.

In any case, the menace of inflation can be effectively curbed by having a proper control over costs. The Third World countries have a disproportionately high-cost economy due to a variety of factors. Creation of vast unutilised capacity particularly in their public sector is one of them. Consequently, the inputs have become out of all proportion to the actual output. The cost per unit of output becomes very high. In the wake of rising costs, our managements adopt the method of reducing expenditure on various fronts. And they think their tasks finished the moment they are in a position to bring down the expenditure to a level at which the increase in costs may be absorbed so that the price may not have to be increased It is in this way that additional taxes, duties, higher cost of raw materials, higher wage bills, etc., get deflected in order that internal efficiency may be made to go up. The management is then in a position to maintain its existing rate of profit while at the same time, combating the rise in costs allround.

In such a situation, it is essential to know what actually the productivity concept implies. Certainly, it is not the absolute level of costs but the ratio between *the inputs and the output that should really* matter. When the term productivity gets confused with increased production, it prompts managements to cut all-round expenditure Actually, increase in production can be brought about by increasing inputs of all kinds. For example, in agriculture, production can be increased by bringing more land under cultivation, by using improved seeds, manures, mechanisation, etc. In industry, it may be brought about by adopting latest technology, by using improved raw materials, by adopting methods of scientific management and so on.

Management Role

There is nothing wrong in increasing production by increasing factor inputs but productivity is not merely increased production. It involves increasing production with less and less quantity of inputs. As such, it implicitly means more and more production with a given amount of resource inputs, whether human or material or both. The management must, therefore, see to it that better and more production takes place per unit of resources. In doing so, the management should not consider productivity as merely the function of labour. It should reckon with items like skills, consumption standards, inventories, transport, etc., apart from the traditional factors of land, labour, capital, enterprise, etc.

Further, the management has also to care for the costs which it does not incur but which do get reflected in the price of commodities produced. A cost conscious manufacturer has got to extend his cost control system beyond the boundaries of his business. Naturally, therefore, he should find ways and means of reducing the cost incurred by the suppliers of raw materials, spare parts, accessories, etc, along with the costs incurred by distribution channel. This he can do by giving advice and technical guidance. Only then the cost could be cut all along the line. It will mean that the manufacturer need not necessarily reduce his all items of expenditure within his firm. Of course, his endeavour should be to evolve a rational cost control system so that expenditures incurred under various heads are brought to a minimum in order to avoid waste.

Technology and Skills

Reduction in costs all-round will certainly help in effecting improvement in the profitability of the enter-

(Contd. on Page 28)

Navin Chandra Joshi is a Senior Lecturer in Motilal Nehru College, New Delhi

Satish Chandra Das Gupta : A Saga of Service And Sacrifice

S. K. Ray



HE IS "one of the truest of men", in the words of Gandhiji, a man with little worldly wants. He is a karmayogin who staked his life for the good of the poor and the down-trodden and in whom the spirit of disinterested dedication and selfless sadhana ever burns. He has set a rare example of how to combine science with the ideals of truth and service. That is Satish Chandra Das Gupta, the oldest living associate of the Mahatma, better known as the Gandhi of Bengal. With the weight of his hundred years he was sitting on his cot in his humble hut in a remote obscure village in the interior of Bankura district two hundred and fifty kilometres away from Calcutta.

My first question related to the Krishi Reseach Farm that Shri Das Gupta had set up fourteen years ago, a farm that has successfully tackled a problem that baffled the ingenuity of leading soil scientists for long.

To Gandhiji's clarion call, hundreds of educated people in India like doctors, scientists, social workers often sacrificed everything they could call their own and went to the rural areas, to serve the ignorant, illiterate people. For them, it as was a duty to motherland, a mission in life to serve the suffering humanity. They worked tirelessly and selflessly for the amelioration of the rural masses. Doctors spread among the masses the importance of cleanliness and sanitation, scientists showed the way for application of science and technology and social workers spread literacy among the rural illiterates. That was long before independence dawned on our country. But what is the position now ? Often doctors and scientists shun to serve in the rural parts Even those educated 'sons of the soil' refuse to return to their own villages to work among the masses. Still there are a few who cherish the value of Gandhian ideals and carry out the rural reconstruction programmes with the same enthusiasm and zeal which they showed at the time of baptism to social service. A shining example is the centenarian, Shri Satish Chandra Das Gupta, the first 1977 Jamanalal Bajaj Award Winner, "for pioneering research done on the application of science and technology for rural development" and who has been described by our President Shri N. Sanjiva Reddy as "one of the greatest scientific innovators and humanists of our land" Our Senior Correspondent Shri S. K. Ray, who recently interviewed this Gandhian humanist at his ashram at Gogra in Bankura district reports.

He has shown how to grow crops on red sandy laterite soil, ever condemned as irreclaimable wasteland There was a perceptible glow of a sense of achievement on his face as the architect of this wonder feat recalled his tireless efforts to convert these eternally fallow lands into lush green paddy fields that they are today.

It all began in the middle of the sixties when a severe drought hit Bankura and other districts in West Bengal leading to famine condititons. Shri Das Gupta at the age of 86 was then deeply involved in carrying forward the Gandhian constructive work from his Sodepur Ashram. He was stirred by the miseries of the poor tribal people who inhabited these barren lands and who were the victims of recurring drought He was equally dismayed at the inaction of the Government in allowing vast tracts of laterite soil to remain fallow year after year. Shri Das Gupta accepted the challenge and resolved to disprove the verdict of the geologists that because of the absence of sub-soil water the laterite soil could never be productive

In a steady voice belying his age Shri Das Gupt began to narrate his experiments that he had ass duously conducted for seven years from 1965 to 197 with his simple tools of tin cans and bamboo tube He was confronted with the twin problems of the tot incapacity of leterite soils, commonly used for roa surfacing, to hold water and the absence of an assure water supply for irrigation The author of many i ventions in his early days was in his elements agai He chose the Santhal tribal village of Gogra, beir the worst affected area, for reclamation. The task tapping underground water presented formidable pr blems, the soil structure being what it was. There w laterite soil, comprising about ninety per cent of r sand particles and big and small gravels and on about ten per cent of clay, upto a depth of ten twelve feet Digging through this layer he ca across patches of hard lava rock. Planting dynami sticks he blasted his way through for another f feet. Then came a layer of rotten white stone wh he pierced through with pick axe. It was a thrill

operation Excavation. By then he had gone about thirty feet down. Again here were patches of lava rock. Hardly had he made a dynamite charge on this layer when plentiful water started gushing from all sides. It was a big moment of joy for the excavator. But then an unforeseen problem came up. The wall of the well caved in. The born innovator was never starved of new ideas. He took to the cascade form of digging and the problem was overcome.

The veteran Leader Shri Satish Chandra Das Gupta passed away when this story was under print.

Shri Das Gupta looked as though he was re-living those challenging days. He spoke of his experiments on the transformation of the surface soil to make it hold water without which crops could not grow. The laterite soil is highly porous and water rapidly drains down the surface and the top soil immediately becomes dry. This infiltration had to be stopped and that could be done only by a reorientation of the soil particles. After going through various stages of trials he evolved a simple process. A plot of fallow land is bunded with earth on all sides to a height of about 25 to 30 cm. Water is pumped into the plot to a depth of 15 to 20 cm. and then the entire plot is puddled with bullock-driven ploughs for several hours without break, the depth of puddling being gradually increased. Because of vigorous churning the clay which had gone down to the lower layers with infiltration of water comes up and the coarser particles go down. In the process, the sand particles get a microscopic coating of colloidal clay. The pattern of the surface soil thus undergoes a complete change.

Barren Land Turned Lush Green

With the transformation of the surface soil and with an assured supply of irrigation water the fallow land turned fertile. The experiment of the crusader was at last crowned with complete success. That this experiment is capable of being carried beyond the limits of the demonstration farms has been admitted by eminent scientists. The top soil of such converted plots has been tested by soil scientists and found to have acquired water retention properties of a lasting nature. In the course of his convocation address at the Bidhan Chandra Krishi Viswa Vidyalaya in March, 1976 Dr. M. S. Swaminathan, the then Director General of ICAR observed : "The potential for converting large tracts of perennially fallow land occurring in Bankura, Purulia and Birbhum has been demonstrated by Shri Satish Chandra Das Gupta. Shri Das Gupta has shown how the water retention capacity of surface soil can be improved and how ground water resources can be tapped."

A repository of inexhaustible energy, the centenarian was keen to answer my questions. He said that there were in all twenty-two acres of land with his farm. Fifteen acres of laterite soil had already been turned into paddy field and the remaining seven acres of virgin land was yet to be reclaimed. His successful experiment sent a wave of unremitting enthusiasm among the simple santhals livings in and arou Gogra who acclaimed the technique as a n acle that would help deliver their age-old fall land from what they had thought to be curse of enternal barrenness. This heartening perseverence, a method that precisely suited these ha working people. For, though involving hard lab the method entailed little investment. The gradua widening landscape of blooming fields at Gogra wh nothing had grown for ages is slowly but unmist ably giving shape to the dreams of the Patriarch t Shri Das Gupta is to the local people.

Gandhian Constructive Work

The highly rewarding work at Gogra seems to the consummation of Shri Das Gupta's long record innovative constructive work that began as far ba as in the twenties when this chemical engineer education and training was irresistibly drawn Gandhiji's ideals of truth, non-violence and servi He renounced his remunerative job at Bengal Cher cal Works to join the mainstream of the natior movement. That was the watershed in his life- total break with a life of plenty and security and init tion into a life of selfless service to the motherla and to the common man.

The living archive of an eventful era was in a refle tive mood and that was the right moment for me allude to those historic days when independent Inc was in the making. He delved into his memori with obvious delight. Those were the days when t entire nation was in a ferment. Several times courted imprisonment. But the interest of this deve disciple of Gandhiji lay more in the field of constructi work on Gandhian lines—rural reconstruction throu promotion of Khadi and Cottage Industries and r moval of untouchability, casteism and communalis The gifted scientist fruitfully exploited his genius response to Gandhiji's call to apply science for the u lift of the poor. The Khadi Pratisthan devoted its to the task of revitalizing the cottage industries. Wi its branches in Calcutta and elsewhere the Pratisth spearheaded the programme of constructive work f more than two decades and served as a centre of r search for rural development and training of worke

Gandhiji's constructive programme has great rel vance even today. The free India of Gandhiji dreams envisaged not only political freedom, but al social and economic justice for all.

Shri Das Gupta was also the Director of Wardha Research Institute for Villige Industries for a tim He evolved a host of newer and cheaper processes an products suitable for production on a cottage scale- improved mustard seed crusher of village type, che per gobar gas plant replacing the brick lining of t walls of the plants well with bamboo matting, soa from non-edible oil, hand-made paper from bambo pulp, matches from bamboo sticks, to name only few. He also developed new techniques of improvi khadi products. A new life was infused in the kha and village industries.

With this prolific inventor it was a constant endea vour to diversify the products of the khadi pratistha and with him it was a passion to tread newer pasture

In those days the Britisher were the masters in trade and industry in our country zealously guarding the secrets of their products. But Shri Das Gupta would not let them keep their manufacturing processess a secret. He told me of one such episode. The Buckingham Mills of Kanpur used to be the sole supplier of huge quantities of chrome khaki to the Karachi Municipality for making uniform. Shri Das Gupta wanted to get the order for his khadi Pratisthan. Gandhiji came forward to help him and asked Monilal Kothari to approach Jamshedji the Chairman of the Karachi municipality. Jamshedji agreed. Shri Das Gupta set himself to finding out the secret of the chrome khaki. The secret was unravelled. Bichromate chemical was the principal ingredient. He produced the chemical and the Khadi Pratisthan began to supply chrome khaki to the Karachi municipality

vention spree were packed with many interesting happenings that provide an insight into his irrepressible will to achieve a thing on which he sets his mind. He recalled the story of 'Magsulph' that had changed the course of life. 'Magsulph' was not available in the country during the World War as supplies from Germany of magnesium carbonate had stopped. Shri Das Gupta decided to produce the substance at Bengal Chemical Works. He had on his finger tips all the information that was given in Watt's Commercial Products of India. The cluch to the preparation of 'Magsulph' was there in the book. Chalk Hills of Madras would provide the raw material. He got the supplies from Madras through a dealer and produced 'magsulph'. Empress Mills of Nagpur began to buy huge quantities of magulph from Bengal Chemical Works to impart a short-lived stiffness and a glaze to their

---

"Today, when the affluent world is becoming aware of the menace of dehumanised technology, while the poorer countries continue to look to science to deliver them from the boundage of poverty, he has shown how science can be made to serve human need without wrecking the harmony of rural life".

---

fabrics to make them more attractive to the buyers. Bengal Chemical Works earned huge profits. But soon there was a mishap. A worker engaged in the manufacture of this substance died of acid burns. The death, though resulting from the worker's own negligence, left Shri Das Gupta bitterly repentant. It was he who had started the manufacture of a product which had hardly any economic value, but cost a life. Remorseful Satish Chandra decided to quit Bengal Chemical Works and cast his lot with the brave warriors of the freedom struggle. The episode only revealed him in his true colours—a humanist first and a humanist last

This indomitable urge of Shri Das Gupta to displace the Britishers from the commanding positions in trade and industry had found an eloquent expression in his earlier life when he was with Bengal Chemical Works which Acharya Prafulla Chandra had established to further the cause of swadeshi in the wake of the movement over Partition of Bengal. How Shri Das Gupta came to be associated with Bengal Chemical Works is also a dramatic story. At that time the chemistry students of Calcutta University were using the Bengal Chemical Works laboratory for their practical classes. Satish Chandra was a student then, Acharyadeva was highely impressed by his earnestness and originality. Satish Chandra was in the laboratory one day after his M.A. examination. Acharyadeva came, grabbed him by his wrist, took him to the office of his works and installed him as the Superintendent of the factory. Overnight Shri Das Gupta became the boss of Bengal Chemical Works. Thus began in 1906 the memorable period of a unique partnership between Acharya Prafulla Chandra and Shri Satish Chandra which worked wonders. The relationship between them was as much like that between a teacher and a pupil as that between father and son. Between them they carried on a relentless drive for replacing British goods in the Indian market. In fact, they were the early poineers in establishing indigenous industries in the country. Soon after Shri Das Gupta joined, Bengal Chemical Works outshone the British firms which had monopolized the pharmaceutical and chemical industry. Much to their discomfort he went on inventing newer and better products one after another. Caffeine from waste tea leaves, printing inks, alkaloids, strychinine and ferro alum were among the many chemicals and drugs produced by him. A notable invention of his was a fire extinguisher which readily captured the market which had till then been ruled by Minimax, the product of a British firm. Thousands of his Fire King which was superior to and cheaper than the Minimax were exported to Mesopotamia during the first World War

Votary of Truth

Shri Das Gupta went on sharing his reminiscences with me. Those youthful days when he was on an in-

He had also had by then a taste of joy that he could derive from serving the distressed people. The occasion was the severe floods in North Bengal. He was sent by Acharya Prafulla Chandra as President of the Bengal Relief Committee to the flood-affected areas to organise relief work. So though he was in his work that Subhash Chandra Bose when sent later by Deshbandhu Chittaranjan Das to assist him wrote back saying that his presence was redundant. When freedom was about to down on India, Noakhali in the then East Pakistan was ablaze with communal riots. Gandhiji decided to go on a pilgrimage to Noakhali. Shri Das Gupta was the advance guard of the Mahatma. He did the spade work for Gandhiji's historic march through those riot-stricken areas.

Honours declined

The life of Shri Satish Chandra Das Gupta is a saga of service and sacrifice After Independence he was offered the post of Dv. High Commissioner at Dacca but, true to his lofty ideas, he did not accept the offer. He, however, agreed to become a member of the Khadi Board set up by the Government of free India because that would offer him a greater opportunity to carry on his constructive work. But when the Government decided to introduce the Ambar Charkha in preference to the manual charkha he resigned in protest, for he would not compromise on Gandhian principles. His idealism was again vindicated when he declined the Tamrapatra and a pension as a freedom fighter. When I asked him the reason for it he raised his voice and

ently said : "suffering in jail gave me ecstatic by and n opportunity to serve the nation. How can I accept noney in lieu of such suffering?"

Shri Das Gupta is a linguist and a versatile writer oo. He produced a precise Bengali translation of Gandhi's autobiography written in Gujarati. He translated the original Ramcharit Manas and the Bhagavad-gita into Bengali. His Bengali book -Rabindranath O Gandhi- is a valuable addition to literature on Gandhi and Tagore. A number of authoritative books written y him were the products of a scientific mind enriched with practical experience. His Cow in India in two volumes was recommended for veterinary students. At the instance of Mahatma Gandhi he made extensive studies to write the treatise, Home and Village Doctor to enable the poor villagers to treat their ailments themselves at a low cost. There is an interesting story associated with this book. After going through the book a person wrote to the author addressing him as Doctor. Shri Das Gupta did not inform the man that he was not a Doctor. Gandhiji rebuked him for concealing the truth. He had borne that sting in his mind for many years till he was actually conferred the degree of Doctor of Science *Honoris Causa* earlier this year by a Viswa Vidyalaya.

This honorary degree was awarded by the Bidhan Chandra Krishi Viswa Vidyalaya to honour this "devoted propounder of the Gandhian philosophy and a great social organiser" for his memorable contribution to the economic improvement of the rural people through the development of the cottage industries and the khadi movement and for his development of a novel and very cheap technique of reclaiming red laterite fallow wastelands at Bankura with indigenous material. And, in the fitness of things, this true disciple of Gandhiji was also selected as the first recipient of the Jamanalal Bajaj Award instituted in 1977 to give recognition to the services of those who will truly translate the Gandhian ideal of improving the lot of the poor. The citation of this award of one lakh rupees presented to Shri Das Gupta by the President, Shri N. Sajiva Reddy, on November 4, 1978 rightly said . "By choosing Shri Satish Chandra Das Gupta for the Jamnalal Bajaj Award for pioneering research done on the application of science and technology for rural development the Jamnalal Bajaj Foundation is proud to honour one of the great scientific innovators and humanists of our land, in whom, at 99, the light still shines bright".

Lukewarm Response

But the irony is that the bountiful eulogies for all his service and sacrifice notwithstanding, this grand old man now spending his days at Gogra is an unhappy man. And rightly so it is a pity that the person who donated his life and resources to the nation has been begging for assistance without any worthwhile response to promote a magnificent cause. His work at Gogra has been mainly financed by the sale proceeds of the crops of his farm and donations from his friends.

All through his life this relentless karmayogin has zealously carried forward his noble mission of serving the poor which he undertook in his youth. Even at this ripe age he is seized of a number of projects, one of them being the setting up in villages of 'Pinjrapoles' with a string of cottage industries associated with them. There is hardly any sign of an ebb in his fervour as yet and that is what is expected of a giant like Satish Chandra Das Gupta. □

INDUSTRIAL PRODUCTIVITY IN THIRD WORLD

(Contd. from page 23)

prise though it would be only marginal. What is, however, more desirable is that the production performance itself is improved by the application of productivity measures like introducing new products, new technology being made use of, better skills created within the organisation, plugging wastages, utilizing the created capacity, etc. These actions would mean, better and effective use of inputs already available or created within the enterprise. Indeed, not to do so must implicitly mean addition to the existing cost which any business can ill-afford to incur. In this sense, not to effect economy to work inefficiently is as much an item of cost in business as, for example, making use of electrical power is. However, in our conventional system of accounting, the cost of not doing something which should have been done for better performance, is not taken into consideration.

It is also erroneously believed that an increase in productivity reflects the employment potentiality of an enterprise. It is generally thought that improved productivity through the use of improved technology results in displacement of labour. It must therefore be known that productivity, in itself, does not necessarily create unemployment. Rather, reallocation of work among employees for raising productivity makes employment of people more rational and more efficient. In fact, the employment potential of a concern largely depends upon the total investment made, technology used, nature of commodity produced and such other considerations. To think that productivity is significantly related to the contribution of labour is a total misconception. In fact, the economic growth of many industrialised countries cannot be fully explained merely in terms of labour and capital and investment in machinery, etc. As much as 40 per cent of the growth rate is to be explained in terms of non-traditional factors, investment in education, skills, and above all, in the knowledge of the principles of productivity. Further, increased supply of one commodity must help in boosting supply of other commodities so that all industries become productivity conscious. The result would be more and more supply of goods, more of national income, additional savings and a higher propensity to consume. All these will, in the Keynesian style, augment employment opportunities.

In the final analysis, the productivity concept becomes one of effecting maximum economy in the utilisation of scarce resources. It is only then that significant advances towards self-sufficiency can be achieved. A successful productivity policy must imply a higher ratio of output to labour as well as of the other scarce inputs. Unfortunately, even with rich resources and abundant manpower supply, the developing countries have a fantastically low standard of living. Perhaps, productivity efforts, when applied to these countries, may be able to make a dent in the sluggish upward movement of the index of industrial production. □

Gram Swarajya Kosh

—An Experiment Towards Elimination of Usurious Money Lending

Prem Bhai

IN Rural India, more so in the tribal areas, moneylenders pose a serious problem in the development of the rural poor. In Dudhi tribal area of Mirzapur district, it was deeply shocking to see the pitiable condition of the bonded labourers and the poor farmers, who had mortgaged their best paddy lands in lieu of petty loans borrowed from the money-lenders.

A survey conducted by Agrindus Institute in 1975 revealed that 75 per cent of the 1000 families in 100 villages were in debt. The outstanding loan was Rs. 5, 17,711 out of which 45 per cent was taken for agricultural development and inputs while 55 per cent for consumption and social ceremonies. It was further revealed that only 2.35 per cent and 9.3 per cent of it came from the cooperatives and other Government departments respectively. Gram Kosh provided 21.60 per cent and 66.65 per cent came from the private moneylenders. Out of the total loans provided by moneylenders 20 per cent was provided at interest rates ranging between 25 to 49 per cent, 34 per cent at 50 to 99 per cent; and 32 per cent at 100 to 200 per cent. It was further revealed that 130 farmers had mortgaged 253 acres of their best paddy lands in lieu of an average loan of only Rs. 343 per acre, which was about the price of the crop produced from the same land annually. It was difficult to record data on bonded labourers as they were extremely afraid of physical violence from the moneylenders. However, the survey of 15 bonded labourers revealed that their loans ranged between 50 to 1300 rupees only.

In the area where total loans provided from official sources are less than 12 per cent of the borrowing needs, not even including the development needs of the farmers, the evil of moneylenders, (involving falsification of accounts, usurious rates of interests) cannot be mitigated merely by enacting laws or raising political slogans. The problem can only be selved by promoting educational measures and the organisation of the rural poor on the one hand and creating an alternative source of readily available cheap credit on the other hand. The institution of Gram Swarajya Kosh is an important experiment in this direction.

From the beginning of the Agrindus Experiment in 1967-68, it was tried to promote a Gram Kosh (village fund) made up of small contributions from the villagers, as a mutual insurance system to help people for urgent needs. In a few villages it got established for a few years, but was mismanaged and soon collapsed for want of educated people, a proper accounting system and honesty. It lingered on in certain other villages, but could not produce confidence and hope.

During 1973-74 it was encouraged with a decentralised institutional framework. In each village convered under the development of the Ashram, a Gram Kosh was set up. And a three tier people's organisation was introduced for its proper management. It was decided that besides small contributions from the farmers, any inputs or investments provided by the Ashram for the Development or consumption needs, will be repaid into the Gram Kosh, in easy instalments, to be decided by the Gramsabha [illegible] Out of this Gram Kosh the investments [illegible] available to the same and other farmers on a [illegible] basis.

Prem Bhai is Secretary, Banwasi Seva Ashram, Mirzapur (U.P.)

Decentralised Management

A three tier people's organisation was promoted f the management of the development plans as well of the Gram Kosh. It constituted a Gram Swaraj Sabha at the village level, a Kshetriya Gram Swaraj Sabha at the level of a pocket of 20—25 villages, an a Kendriya Gram Swarajya Nav Nirman Samiti the regional level by drawing representatives of the village and Kshetriya Sabhas, social workers and villag leaders. A dynamic programme for the promotion education, health, agriculture, village industries an community organisation is now being implemented b the consensual decisions of the peoples' committee various levels. At the same time a process of capit regeneration in the form of a Revolving Fund/(Gra Swarajya Kosh) has been set in motion in those vill ges. All disbursements from the Gram Kosh a made on the basis of consensual decisions of the Gran sabhas and all recoveries into the Gram Kosh are al made by the initiative of the village committees.

The Gram Kosh at the village level has been poole into a central gram Swarajya Kosh, having an offici bank account and an annual external audit by a fir of charactered accountants. A system of periodica on the spot, verification or internal audit of all (fo merwise) disbursements and recoveries into the Grar Kosh in each village is made by a committee havin representatives of the village, Kshetriya Sabha an the Kendriya Samiti.

All defaults or cases of non-payments are hande by the same committees. No legal cases are institute against defaulters, but special pressures are employed enhance the rate of recovery. The recoveries in th Gram Swarajya Kosh have been between 80 to 94 pe cent of the expected instalments during the last fiv years. The deposits in the Gram Kosh during th last year amounted to Rs. 4,85,000/- which is nearl 94 per cent of the expected instalments due from th villagers.

Recoveries and Disbursements

The recoveries into the Gram Kosh during first tw years ending 31st March 1976 were Rs. 1,07,65 only. The deposits during 77-78 amounted Rs. 4,84,938. The collections from Govindpu pocket of villages which is nearest to the main cent are not better than the further group of villages. A such the performance of the Gram Kosh is not direct related to its proximity to the main centre but on th local initiative.

During 1977-78, Rs. 1,63,538 were provided f the purchase of work bullocks, Rs. 23,563 for liqu dation of private debts, Rs. 10,617 for village indu tries, Rs. 11,185.00 for milch animals, Rs. 19,952 f wells and irrigation, Rs. 7,870 for land reclamati and Rs. 1,26,562 for seeds and fertilizers. As su the village committees liked to disburse more lo for work bullocks and agricultural inputs which a recoverable early than for long term investmen e.g. for construction of wells, earthen dams, la shaping etc.

New pocket with additional number of villages a farmers are being added every year under the Gra kosh scheme. The Gram Kosh now covers over 30 farmers.

(Contd. on page 30)

Rural Bank in Assam

R. N. Bezbaruah

INSPIRED BY the 'Success' of the first rural bank in Assam established in 1976, the State Government have now taken initiative to have a second one in the State. Established at Nalbari in Kamrup district, Assam's first rural bank,—'Pragjyotish Gaolia Bank' has now 30 branches spread over three districts. By December, 1977, it had mobilised deposits to the extent of Rs. 21.39 lakh through 9,496 deposit accounts and advanced Rs. 9 lakh to 1,923 individual borrowers and Rs. 12.77 lakh to 92 Co-operative Societies. During the next 12 months its transactions picked up substantially and, as on December 31, 1978, the number of its depositors increased to 21,245 accounting for a total amount of Rs. 102.08 lakhs. By the same period, its direct advances and advances through co-operatives amounted to Rs. 32.41 lakh and Rs. 36.34 lakh respectively. The respective number of borrowers were 4,425 and 223 respectively.

Three District Covered

The three districts, served by the first Rural Bank, cover an area of about 30,000 sq. kms. having a population over 68 lakh. Agriculture is the only means of livelihood for nearly 70 per cent of the working force in these districts. Of the 10 lakh hectares of land cultivated, only 2 85 lakh hectares are devoted to multiple cropping. The total annual production of paddy is over 10 lakh tonnes. Other crops are wheat, jute, mustarseeds, pulses, potato, sugarcane etc. Important activities allied with agriculture—like dairy, fishery, piggery, etc. are yet to be developed in a systematic way. Handloom industry, which is a major subsidiary occupation of Assam's rural people, is, in these districts, however, languishing in the absence of adequate marketing facilities and standardisation of products.

The paid up share capital of the Pragjyotish Gaolia Bank is Rs. 25 lakh (authorised share capital : Rs. 100 lakh), subscribed by the State Government (15 per cent), the Central Government (50 per cent) and the sponsoring United Bank of India (35 per cent) Total borrowings by the bank during the 1978 calender year amounted to Rs. 21.25 lakh, the creditors being the Reserve Bank of India (Rs. 12.50 lakh) and the UBI (Rs. 8.75 lakh). A "door-to-door" approach by the branches increased the amount of deposits in the bank from Rs. 21.39 lakh in 1977 to Rs. 102.69 lakh in 1978. This amount consisted of Savings (Rs. 56.70 lakh), Fixed Deposits (Rs. 35.52 lakh), Recurring Deposits (Rs. 5.16 lakh) and other heads like Current deposits, Cash Certificates etc. (Rs. 5.31 lakh).

Agricultural Credits

The loans granted by the bank during 1978 benefited as many as 11,420 persons, the average size of loan being nearly Rs. 600. Small and marginal farmers were granted crop loan for raising paddy, jute, wheat etc. Earlier, most of these people were dependent on the village money-lenders and had to pay exorbitant rates of interest. The assistance given by the bank in the forms of fertilisers, seeds, pesticides pumpsets, powertillers, etc. had a demonstrativ effect on the farmers, who had hitherto been ignoran of the modern means of production. Of the total ad vances granted till the end of 1978, the agricultura sector accounted for about 70 per cent (Rs. 48 lakh followed by retail trade and small business secto (Rs. 9.6 lakh or 14 per cent). Advances in the agri cultural sector covered crop loans, "vegetable financ ing", minor irrigation schemes, farm mechanisation animal husbandry, fishery, horticulture and rehablita tion of flood-affected and other landless farmers. Th other sectors included retail trade and small business road transport, assistance to jobless people to em ploy themselves in tailoring, clinical centres repairin shops, etc., and financing rural artisans like potters blacksmiths and bamboo and cane workers. Durin 1978, the bank extended financial assistance t 527 professional and self-employed persons to the tun of Rs. 2.93 lakh and to 365 artisans amounting t Rs. 1.38 lakh.

Since its inception till the end of 1978, the banl had disbursed credits to the tune of Rs. 76.33 lakh ot which Rs. 23.40 lakh was due for repayment b the end of the said year. The bank, however, succed ed in recovering a total amount of Rs. 18 25 lakh

The farmers in certain cases are reported to b deprived of full use of irrigational water owing t defects in installation of shallow tubewells. It is als said that the management of the adopted GP-level co operative societies are too ineffective to exert an pressure on their defaulting members. The unsatisfac tory repayment position in the case of co-operativ societies has been attributed also to "lack of initiativ on the part of the societies in sanctioning and follow up of agricultural loans".

Repayments of Loans

To improve the recovery position, the bank has however, advised all its branches to launch an inten sive drive. In respect of crop collection damaged due to non-germination of seeds, it has decided t claim compensation from the Seeds Corporation. Othe steps contemplated include constant touch to be maintained with the Assam Fertiliser Corporation to ensure timely supply of fertilisers, getting the defective shallow tubewells repaired by the State Irrigation Department, legal measures to ensure timely repayment of both direct and indirect loans.

The new second bank, which is to cover the districts of Nowgong and Sibsagar, will have its headquarters at Golaghat (Sibsagar) with three branches two of which will be located in Nowgong district

R. N. Bezbaruah is our Senior Correspondent at Gauhati

Peoples Own Banks

(*Contd. from page 29*)

The Gram Kosh are growing into a dynamic an expanding system of people's own bank to replac the money lenders for their credit and developmenta needs. In about 50 project villages, people do not a all go to the money lenders for loans. The Gram Kos has more or less replaced the money-lenders in abou 140 villages with respect to the agricultural development loans.

The Gram Swarajya Kosh needs more investmen and a rationalised socio-legal frame-work for it smooth functioning in the service of the poor, fo Antyodaya the Cherished goal of Gandhi's India. □

OOKS

Media

...ia and the Third World: *by D. R. Mankekar, ...ed by Indian Institute of Mass Communication, ... South Extension Part II, New Delhi-49. Pages ...,* *Rs.* 10.00

THE BOOK under review makes an attempt to express to the people the debate witnessed in the last three years, between the world's developing and developed countries. This debate is not only confined to problems of commerce, movement of primary and manufactured goods and transfer of capital and technology, but also to culture. The developed countries hold the monopoly of international information media and modern telecommunication technology, whereas the developing countries demand a fair deal in the area of international media. Mr. Mankekar has chosen a good moment to fill the void.

The book contains a representative collection of essays and speeches by Mr. Mankekar. In all, there are 17 chapters which deal with developing and developed countries. In one of the speeches, he gives a very good piece of information on newspapers. He says, "A newspaper gets some 70,000 words a day, of which 25,000 are used and the remaining 45,000 were killed. To them you add 5,000 words of development news, that is non-aligned news If you do not like it, by all means kill it—you would be just killing another 5,000 Every day your news editor kills news items on the basis of his news judgement, good or bad. But my plea is : for god's sake treat any news items on their merits I don't want charity. Use your news judgement. If there is news value, use them. If they have no news value, kill them and tell me so. Then I may improve their quality and content."

Mr. Mankekar is of the view that a democracy must have a Press, and if the Press cannot pay its way, then it is the duty of the State to step in and ensure that Press survives.

The author suggests that a World Press Institute be set up instead of a World Press Council because of the former's acceptability to media men. He writes in the essay, "Rights & Responsibilities", "The Institute should play the role of a self-regulating as well as a watch-dog body. Consisting, as it will be, exclusively of representatives of non-official professional journalistic institutions, there should be no objection from any quarter to the World Press Institute (W.P.I.) playing such a role. The W.P.I. would thus keep a close watch on the performance of the media and record and entertain complaints on any breaches of the media men's code of conduct and ethics."

The book also discusses the concept of freedom of information, the non-Aligned News Pool and challenges before the Pool, cultural self determination and the points of differences between the developing and developed countries.

...the whole, the book is very informative and ... It will be of great assistance to mass com... ...tors, scientists, politicians and other interested ... subject. It will also prove of interest to the ... reader.

Nitish S. Rele

Finance Commission

The Seventh Finance Commission's Report : A C... que by S. Venu, Institute of Financial Management ... Research, Madras, Pages 48; Price Rs. 7.50

THE INSTITUTE of Financial Management Research, Madras has done well in bringing o... study on the Seventh Finance Commission by Venu which apart from its topicality is highly infor...tive to the general public on Centre-State financial r...tionship. The complementarity between the Fina... Commission and the Planning Commission in chan...lising resources from Centre to States is well reco...sed. The increasing importance of the transfer ... resources necessitates its extensive discussion am... the general public. The study under review very rig... fulfils this urgent need.

It is in two parts : the first deals with the m... findings of the Seventh Finance Commission and ... second is a critique. The capital receipts and ... revenue increases from new tax measures are by ... large beyond the purview of the Finance Commissi... Briefly, the Seventh Finance Commission recomm...ded the inter-State distribution of income-tax by giv... 90 per cent weightage to population and 10 per c... to collection of revenue, altered the basis of distri...tion of receipts from basic excise duties thereby dou...ing the share accruing to the States to 40 per cent, a... with regard to additional excise duties levied on ite... like sugar, textile and tobacco, it agreed with earl... Commission that consumption should be the basis ... distribution. An important recommendation made ... the Commission relates to the establishment of ... expert non-political agency to play an advisory r... and monitor the recommendations made for futu... guidance. Total transfers under seventh Finan... Commission recommendations amounted ... Rs. 23,062.77 crores as against Rs 11,168.00 cror... under the sixth Finance Commission.

In the second part, the author discusses the imp...cations of various issues confronting the Commissio... Starting with the definition of 'reflection ratios' ... built-in flexibility, income elasticity and the lik... Shri Venu assesses the revenue losses from prohibiti... and commercial viability of State owned public ente...prises. The methodology of tax sharing, provision ... grants-in-aid and availability of loans have been cri...cally examined. Enumerating the so-called technic... flaws of a uniform basis of devolution of reven... proceeds of income-tax and excise duties, he, h... stressed the neutrality principle to achieve gener... horizontal equalisation According to him grants-i... aid could be resorted to in order to achieve specif... objectives besides acting as a compensatory measu... to counteract the regressivity of the collection criterio... The inclusion of poverty-ratio by taking care of th... rural-urban differences is a positive step in bringin... about horizontal equity in the tax sharing base.

It is really commendable that the author has di...cussed on a theoretical plane such an extensive pract...cal problem having far reaching consequences in suc... a short space.

Ganga Madhava Ra...

Licensed U(D)-52 to post without pre-payment at Civil Lines Post Office, Delhi.



"We are all Brothers and Sisters because we have been created by the same loving hands of God. Therefore, the work that we do is only our love for God in a living action and that is why all these people who are involved in the work, also have a chance to put there love for God in the service of the poorest of the poor"

"... us love others as God loves each one of us for He has created us for greater things to love and to be loved"

Mother Teresa

Mother Teresa—The Refuge of the Disabled

MOTHER TERESA [illegible] received the Nobel Peace Prize in recognition of her work in bringing help to suffering humanity is the third Indian citizen to win the prestigious award. When the Award was announced she said "More can now be done for the poorest of the poor with the prize money". This gives a glimpse of the life of the mother and her mission. Her devoted work for the poorest of the poor has been recognised [illegible] a whole constellation of awards. These include the Padma Shri in India (1962), the John F. Kennedy International Award, the Good Samaritan Award (1969), the Pope John XXIII Peace Prize and the Templeton Foundation Prize for Progress in Religion (1971), the Magsaysay Award in the Philippines (1978). Vishwa Bharati University conferred on her its highest honour 'Deshikottama'.

Mother Teresa originally known as Agnes Gonxha Bojaxhiu was born of Albanian parents at Skopje, Yugoslavia, on August 27, 1910. When she was 18, she joined the Irish Order of the Sisters of Loreto.

She came to India in November 1928 to begin her novitiate in Darjeeling. In 1931, she adopted the name 'Teresa'. For nearly 20 years, she taught geography at St. Mary's High School in Calcutta.

It was in September 1946 she felt that there was a call that she should give up everything and dedicate her life totally to God and the poorest by serving the poorest of the poor.

The partition of the country in 1947 brought her face to face with a situation which called aloud for service and dedication. Millions of refugees from the then East Pakistan started pouring into Calcutta and other places of West Bengal.

Besides these refugees, there were also the slums where people lived as human garbage. There were innumerable leprosy patients too.

Mother Teresa took up this challenge. One day with only Rs. 5 in her pocket, she quietly walked out of her school and the cloister into the streets and the slums to face single handed the colossal problem of poverty and want, and to bring to it, if not anything else at least the little soothing touch of a single personal concern for every single personal grief. She tried to comfort the poorest children in the slums. She washed them and taught them.

In 1948 she secured permission from the Pope to leave the Convent. After training in nursing at Patna she began her work in the Moti Jheel slums of Calcutta. Thus began the order of the Missionaries of Charity. At Creek Lane, Calcutta, she opened her first home and her first school for slum children. The same year, she took Indian citizenship. It was then she turned to a coarse white saree with a blue border and a cross on the shoulder.

The first Nirmal Hriday Home for the dying destitutes was founded by her in 1952. Sishu Bhavans were started in several parts of the country. Children disabled by polio or other diseases, or mentally retarded or orphaned and abandoned children found a home in these Bhavans.

She also started a leprosarium in Calcutta in 1957, with five patients. She started a township for leprosy patients near Asansol, in West Bengal.

She neither builds institutions nor preaches reforms or conversion. She only sets up homes for the unwanted and unloved. Jawaharlal Nehru once described her as "the refuge of the disabled".

She understands the despair of the poor, the suffering and the outcasts of society. "Touch a Leper, touch him with love", is her motto. The Sisters go out everyday to where disease and desolation haunt the streets and bring home the dying destitutes.

In 1963, she organised the Missionary Brothers of Charity which works mostly among the lepers. At present her organisation, Missionaries of Charity contains over 700 nuns and operates 60 centres in Calcutta and over 70 in the rest of the world.

Mother Teresa's mission of love has spread to different parts of the world, wherever there is poverty and hunger of a different kind- the hunger of love. Her Missionaries of Charity work among drug addicts, alcoholics and lonely destitutes in several countries."

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and
Published by the Director, Publications Division, Patiala House, New Delhi-110001